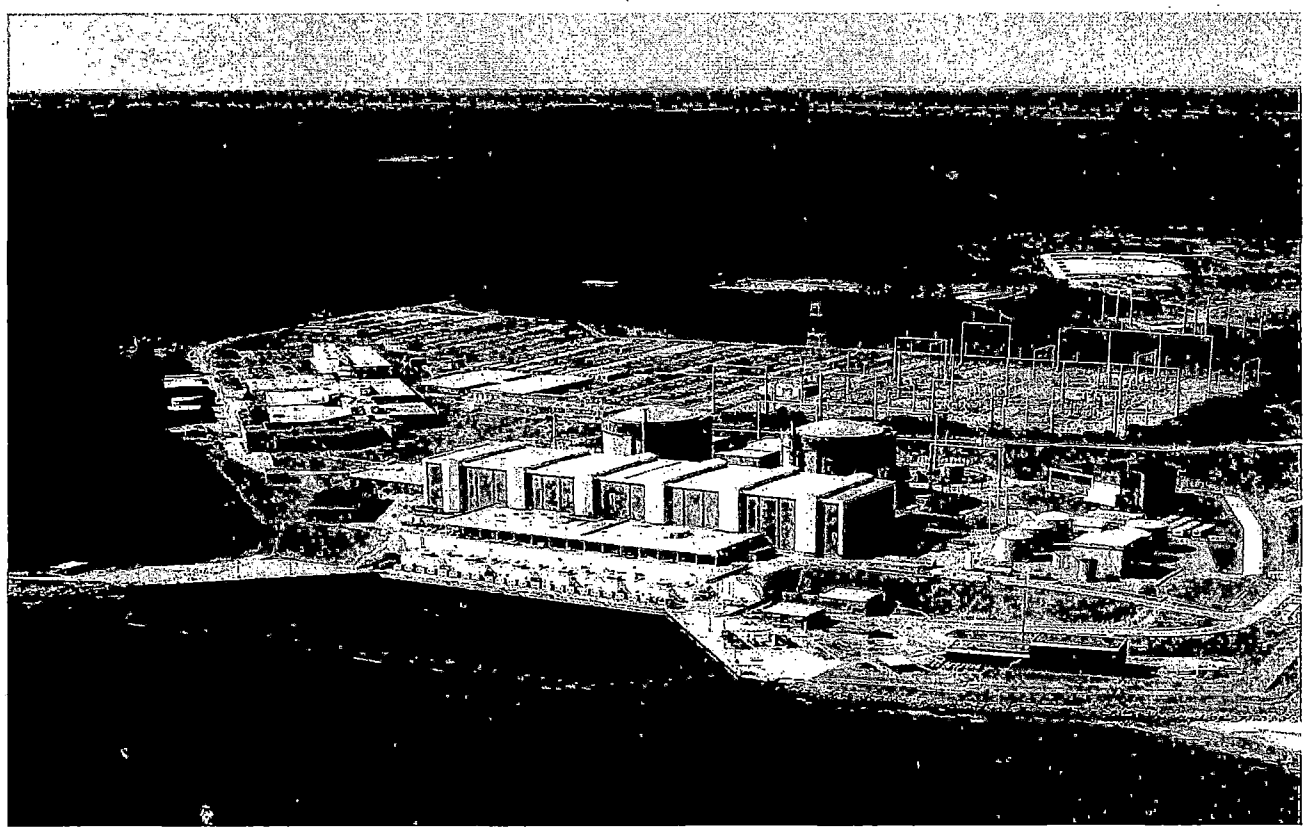

Calvert Cliffs Nuclear Power Plant After Action Report/ Improvement Plan (Maryland)

Exercise Date – September 12-14, 2017

Radiological Emergency Preparedness Program

FEMA

Published December 1, 2017

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EXECUTIVE SUMMARY

From September 12-14, 2017, a full-scale Plume and Ingestion Pathway exercise was demonstrated for the 50 Mile Emergency Planning Zone (EPZ) around the Calvert Cliffs Nuclear Power Plant (CCNPP) and evaluated by the Federal Emergency Management Agency (FEMA), Region III. The station is located at 1650 Calvert Cliffs Pkwy, Lusby, MD. FEMA RIII also evaluated the Ingestion Pathway exercise conducted in Delaware on September 13th and 14th, 2017. The previous Ingestion Pathway exercise for CCNPP was evaluated on October 20-22, 2009. One out-of-sequence demonstration was evaluated on August 14, 2017. The most recent Plume full-scale exercise at this site was evaluated in September 2015. There were two Level 2 Findings, and one planning issue as a result of the FEMA-evaluated 2015 CCNPP exercise. The Planning Issue was successfully corrected prior to the September 12, 2017 exercise evaluation.

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 Plans and Procedures (RERP) to protect the property and lives of residents and transients in the event of an emergency at CCNPP. The findings in this report are based on the evaluations of the Federal evaluation team, with final determinations made by the FEMA, Region III 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 there were two Level 2 Findings, one of which was successfully redemonstrated on September 13, 2017, and the other redemonstrated on December 1, 2017. There were three planning issues identified, which were also closed on December 1, 2017. A Level 1 Finding is defined by the FEMA Radiological Emergency Preparedness Program Manual as follows: "An observed or identified inadequacy of organizational performance in an exercise that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a NPP." A Level 2 Finding is defined as: "An observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety." Finally, a Planning Issue is: "An observed or identified inadequacy in the ORO's emergency plan/implementing procedures, rather than that of the ORO's performance."

FEMA wishes to acknowledge the efforts of the many individuals in the State of Maryland, the risk jurisdictions of Calvert County, Dorchester County and St. Mary's County, and the 23 ingestion pathway counties that were evaluated during this exercise. 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 this exercise. This report contains the final evaluation of the biennial exercise and the evaluation of the out-of-sequence activities.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

CALVEX17

Type of Exercise

Plume and Ingestion Pathway Exercise

Exercise Date

September 12 – 14, 2017

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological release that exceeds protective action guidelines beyond 10 miles.

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

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

State Jurisdictions

- Maryland Department of Agriculture
- Maryland Department of Education
- Maryland Department of General Services
- Maryland Department of Health
- Maryland Department of Health and Mental Hygiene
- Maryland Department of Information and Technology
- Maryland Department of Juvenile Services
- Maryland Department of Natural Resources
- Maryland Department of Natural Resources/Park Service
- Maryland Department of Transportation
- Maryland Department of the Environment
- Maryland Emergency Management Agency
- Maryland Institute for Emergency Medical Services Systems
- Maryland Military Department/National Guard
- Maryland Natural Resource Police
- Maryland State Emergency Operations Center
- Maryland State Highway Administration
- Maryland State Police
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Radiation Protection/Bureau of Radiation Protection
- Pennsylvania Emergency Management Agency
- Virginia Department of Emergency Management
- Virginia Department of Health
- Washington, District of Columbia Department of Health
- Washington, District of Columbia Homeland Security and Emergency Management
- West Virginia Department of Homeland Security and Emergency Management

Risk-Area Jurisdictions

- Calvert County 911 Communications Control Center
- Calvert County Communications and Media Relations
- Calvert County Department of Agriculture
- Calvert County Department of the Environment
- Calvert County Department of Natural Resources
- Calvert County Department of Public Health

- Calvert County Department of Public Safety
- Calvert County Department of Social Services
- Calvert County Department of Technology Services/Geographical Information Systems Office
- Calvert County Emergency Operations Center
- Calvert County Fire/Rescue/EMS
- Calvert County General Services
- Calvert County Public Schools
- Calvert County Public Works Department
- Calvert County Radiological Officer
- Calvert County Sheriff's Office
- Calvert Memorial Hospital
- Cambridge Police Department
- Commissioners of St. Mary's County
- Patuxent High School
- Dorchester County Board of Education
- Dorchester County Emergency Services
- Dorchester County Department of Natural Resources
- Dorchester County Department of Public Works
- Dorchester County Department of Social Services
- Dorchester County Emergency Medical Services
- Dorchester County Farm Service Agency
- Dorchester County Health Department
- Dorchester County Highway Department
- Dorchester County Planning and Zoning
- Dorchester County Public Information Office
- Dorchester County Sheriff's Office
- Department of Natural Resource Marine Police
- Eastern Shore Health Center
- MedStar St. Mary's Hospital
- Resource Fire Company
- St. Mary's County Administrator
- St. Mary's County Aging & Human Services
- St. Mary's County Communications 911
- St. Mary's County Department of Agriculture
- St. Mary's County Department of Public Works & Transportation
- St. Mary's County Department of Social Services
- St. Mary's County External Affairs
- St. Mary's County Hazmat

- St. Mary's County Health Department
- St. Mary's County Metropolitan Commission
- St. Mary's County Recreation and Parks
- St. Mary's County Rescue Chief
- St. Mary's County School
- St. Mary's County Sheriff's Office
- Green Holly Elementary School
- Mutual Elementary
- Town of Leonardtown
- Taylors Island Fire Company
- University of Maryland Shore Regional Hospital

Ingestion Pathway Participants

- Ann Arundel County
- Ann Arundel County Department of Health
- Ann Arundel Office of Emergency Management
- Arlington County Office of Emergency Management
- Arlington County Public Health Office
- Baltimore City Health Department
- Baltimore City Police Department
- Baltimore County Fire and Emergency Medical Services
- Baltimore County Health and Human Services
- Baltimore County Police Department
- Beaver County Emergency Services
- Caroline County Emergency Services
- Carroll County Emergency Management
- Carroll County Health Department
- Cecil County Department of Emergency Services
- Charles County Department of Emergency Services
- Charles County Department of Health
- Charles County Farm Service Agency
- City of Alexandria Communications
- City of Alexandria Health Department
- City of Alexandria Office of Emergency Management
- City of Annapolis Office of Emergency Management
- Fairfax County Health Department
- Fairfax County Office of Emergency Management
- Fairfax County Public Affairs

- Falls Church Health Department
- Falls Church Police Department
- Frederick County Department of Emergency Management
- Frederick County Department of Health
- Hancock County Homeland Security
- Harford County Department of Emergency Services
- Harford County Department of Health
- Howard County Health Department
- Howard County Office of Emergency Management
- Kent County Health Department
- Kent County Office of Emergency Services
- Montgomery County Office Emergency Management and Homeland Security
- Prince Georges County
- Prince Georges County Office of Emergency Management
- Queen Anne County Department of Emergency Services
- Queen Anne County Department of Health
- Queen Anne County Extension
- Somerset County Emergency Services
- Somerset County Health Department
- Talbot County Department of Emergency Services
- Talbot County Health Department
- Washington County Emergency Management
- Washington County Health Department
- Wicomico County Department of Emergency Services
- Wicomico County Department of Health
- Worchester County Emergency Services
- Worchester County Government
- Worchester County Health Department

Private/Volunteer Organizations

- American Red Cross
- Exelon Corporation
- Radio Amateur Civil Emergency Services (RACES)
- University of Maryland Department of Environmental Science and Technology
- WSMD Radio, Star 98.3

Federal Jurisdiction

- Federal Emergency Management Agency (FEMA)

- United States Coast Guard
- United States Department of Agriculture
- United States Department of Energy – Federal Radiological Monitoring and Assessment Center (DOE-FRMAC)
- United States Department of Homeland Security
- United States Environmental Protection Agency (EPA)
- United States Nuclear Regulatory Commission

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all off-site nuclear planning and response. FEMA's activities were conducted pursuant to 44 Code of Federal Regulations (CFR) Parts 350, 351 and 352. These regulations are a key element in the Radiological Emergency Preparedness (REP) Program that was established following the Three Mile Island Nuclear Station accident in March 1979.

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

A. Taking the lead in offsite emergency planning and in the review and evaluation of Radiological Emergency Response Plans (RERPs) and procedures developed by State and local governments;

B. Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;

C. Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated December 7, 2015 (Federal Register, Vol. 81, No. 57, March 24, 2016); and

D. Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:

- U.S. Department of Commerce,
- U.S. Nuclear Regulatory Commission,
- U.S. Environmental Protection Agency,
- U.S. Department of Energy,
- U.S. Department of Health and Human Services,
- U.S. Department of Transportation,
- U.S. Department of Agriculture,
- U.S. Department of the Interior, and
- U.S. Food and Drug Administration.

Representatives of these agencies serve on the FEMA Region III Regional Assistance Committee (RAC), which is chaired by FEMA. A REP Exercise was conducted during the week of September 11, 2017; (in addition to one Out of Sequence exercise) to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving CCNPP. 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 evaluator team, with final determinations made by the FEMA Region III 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.

Emergency Planning Zone Description:

Plume Emergency Planning Zone Description

CCNPP is located near Maryland Highway 2-4 in Calvert County, Maryland, on the west bank of the Chesapeake Bay near Lusby, Maryland. The coordinates of the site are 38°25"39.7' North and 76°26"45' West. The site is owned and operated by Constellation Energy Group and covers an area of approximately 2,108 acres. Seventy percent of the area remains forested and relatively undisturbed by CCNPP activities. There are several endangered plant and insect species within the boundaries of the site. Two pressurized water reactors each generate an electrical output of 825 MW units that provide power to around 400,000 residential customers. Unit 1 began commercial operation during May 1975 and Unit 2 in April 1977. On March 23, 2002, the license was renewed, thereby extending the life of the plant by 20 years.

Nearby communities include: Calvert Beach and Long Beach, approximately 3 miles to the northwest; Cove Point, approximately 4 1/2 miles to the southeast; Chesapeake Ranch Estates, approximately 6 miles to the south-southwest; and the Patuxent Naval Air Test Center, approximately 10 miles to the south. Camp Bay Breeze, a summer camp, is located 2 miles southeast of the site.
The topography of the vicinity around the plant defines several small watersheds. The watershed containing the plant and auxiliary structures drains into the Chesapeake Bay. Chesapeake Bay has an average depth of 30 feet and receives the majority of its fresh water, sediment, and nutrients from the Susquehanna River.

A majority fraction of the land in the area surrounding the site is devoted to agricultural and forest use, such as farming of tobacco, corn, soybeans, and hay. Dairy farming is of minor importance. The waters adjacent to the site are used for commercial fishing, primarily for shellfish such as clams, oysters, and crabs.

There are approximately 50,058 people in the 10-mile EPZ, 13,307 in the 5-mile EPZ, and 2,329 in the 2-mile EPZ. There are approximately 9,563 transients within the EPZ during peak seasonal activities, e.g., daytime, during the summer. No major populated cities (greater than 25,000) exist within the 10-mile EPZ.

Ingestion Pathway Emergency Planning Zone

The Ingestion Pathway EPZ is approximately 7,850 square miles in area, which is equivalent to a 50-mile radius around the plant site. The States of Maryland, Delaware, Virginia, and the District of Columbia have jurisdictions within the Ingestion Pathway EPZ. The largest city within the Ingestion Pathway EPZ is Washington, D.C., with a population of 681,170, approximately 42 miles from the plant site. According to the U.S. Census Bureau 2014 five year estimates, the State of Delaware has a population of approximately 73,452 residents residing within the Calvert Cliffs Ingestion Pathway EPZ.

2.2 Exercise Objectives, Capabilities and Activities

The objective of CALVEX 2017, was 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 50 mile Ingestion Pathway EPZ.

To demonstrate the ability to communicate between multiple State jurisdictions and 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, and the media. Media information was prepared but not actually released.

An essential capability of the REP Program is the ability of the State and risk and support counties to mobilize personnel and resources to support protective actions for the Ingestion Pathway EPZ, including relocation and the interdiction of contaminated food.

2.3 Scenario Summary

NOTE: All information below is simulated. The times for the events are approximate as the NRC licensees operations crew on the reactor training simulator will be provided opportunity for free play.

On September 12, 2017 an Alert is declared by 0811 due to a potential loss of the reactor coolant barrier.

At 1019 a Site Area Emergency is declared due to the potential or loss of two barriers.

At 1130 the steam generator tube ruptures outside containment and potential loss of fuel cladding exists. At 1142 a General Emergency is declared for the potential or loss of the third barrier. The State of Maryland will make protective action decisions based Protective Action Recommendations (PARs) from the Licensee and State officials.

At 1234, this portion of the exercise is terminated.

On September 13, 2017 field sampling teams assessed water, soil, dairy and leafy vegetables for radiation contamination and pre-selected schools responded to the events from September 12 as if they were occurring on that day.

On September 14, 2017 radiation data was presented to communities surrounding CCNPP out to 50 miles and implementation of PARs and PADs were discussed.

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
AnnCtyEOC(I)	Emergency Information & Instructions for the Public/Media	5b1
BalCoEOC(I)	Availability & use of Commodity & Resource Information	3e1
BalCoEOC(I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
BalCoEOC(I)	Implementation of Relocation/Reentry/Return Decisions	3f1
BalCoEOC(I)	Emergency Information & Instructions for the Public/Media	5b1
CalCo PS MES	Implementation of PADs for Schools	3c2
CalCo PS PHS	Implementation of PADs for Schools	3c2
CalCo TACP	Equipment and Supplies to Support Operations	1e1
CalCo TACP	Implementation of Emergency Worker Exposure Control	3a1
CalCo TACP	Implementation of Traffic & Access Control	3d1
CalCoEOC	Impediments to Evacuation	3d2
CalCoEOC	Implementation of Traffic & Access Control	3d1
CalCoEOC	Implementation of PADs for Schools	3c2
CalCoEOC	Implementation of PADs for disabilities & access/functional needs people	3c1
CalCoEOC	Implementation of KI PAD for Institutionalized Individuals/Public	3b1
CalCoEOC	Implementation of Emergency Worker Exposure Control	3a1
CalCoEOC	Mobilization	1a1
CalCoEOC	Emergency Information & Instructions for the Public/Media	5b1
CalCoEOC	Direction and Control	1c1
CalCoEOC	Activation of the Back-up ANS	5a3
CalCoEOC	Communications Equipment	1d1
CalCoEOC	Equipment and Supplies to Support Operations	1e1
CalCoEOC	Activation of the Prompt Alert & Notification System	5a1
CalCoEOC	PADs for disabilities & access/functional needs people	2c1
CalCoEOC	PAD decision-making process and coordination for the General Public	2b2
CalCoEOC	Emergency Worker Exposure Control Decisions	2a1
CalCoEOC (I)	Availability & use of Commodity & Resource Information	3e1

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
CalCoEOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
CalCoEOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
CalCoEOC (I)	Emergency Information & Instructions for the Public/Media	5b1
CarCo MD EOC (I)	Availability & use of Commodity & Resource Information	3e1
CarCo MD EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
CarCo MD EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
CarCo MD EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
CBEOC(I)	Availability & use of Commodity & Resource Information	3e1
CBEOC(I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
CBEOC(I)	Implementation of Relocation/Reentry/Return Decisions	3f1
CBEOC(I)	Emergency Information & Instructions for the Public/Media	5b1
ChrlsCo EOC (I)	Availability & use of Commodity & Resource Information	3e1
ChrlsCo EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
ChrlsCo EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
ChrlsCo EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
CrlC EOC (I)	Availability & use of Commodity & Resource Information	3e1
CrlC EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
CrlC EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
CrlC EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
DE FST B	Equipment and Supplies to Support Operations	1e1
DoC EOC (I)	Availability & use of Commodity & Resource Information	3e1

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 September 12-14, 2017, Post-Plume REP Exercise, and the out of sequence exercise evaluations conducted on September 13 and 19, 2017. The exercise was conducted to demonstrate the ability of the ORO of State and local government to protect the health and safety of the public in the 50 mile EPZ surrounding the CCNPP.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the Exercise Evaluation Area Criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the exercise evaluation area criteria is contained in this report.

3.2 Summary Results of Exercise Evaluation

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

(D) Demonstrated Strength: an observed action, behavior, procedure, and/or practice that is worthy of special notice and positive recognition, Note: this is already a common practice that many Regions employ when identifying demonstrated strengths.

(L1) Level 1 Finding: an observed or identified inadequacy or organizational performance in an exercise that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in event of a radiological emergency to protect the health and safety of the public living in the vicinity of a Nuclear Power Plant (NPP).

(L2) Level 2 Finding: an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.
(P) Plan Issue: an observed or identified inadequacy of organizational in the OROs emergency plan/implementation procedures, rather than that of the OROs performance.

(N) Not Demonstrated: term applied to the status of a REP exercise Evaluation Area Criterion indicating that the ORO, for a justifiable reason, did not demonstrate the Evaluation Area Criterion, as required in the extent-of-play agreement or at the two-year or eight-year interval required in the FEMA REP Program Manual.

(M) Met: status of a REP exercise 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-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 by Classification

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant			
Location Abbreviation	Criteria Title	Criteria	Classification
MDACCEofBrst	Field Team Management	4a2	L2
MD SFMT A	Plume Phase Field Measurement, Handling and Analyses	4a3	L2
MD SFMT B	Plume Phase Field Measurement, Handling and Analyses	4a3	P
MD IFST2	Equipment and Supplies to Support Operations	1e1	P
GEL Laboratory	Laboratory Operations	4c1	P

Table 3.1b – Exercise Evaluation – Criteria Met

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
GEL LAB	Equipment and Supplies to Support Operations	1a1
AACo EOC (I)	Availability & use of Commodity & Resource Information	3e1
AACo EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
AACo EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
AACo EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
AnnCtyEOC(I)	Availability & use of Commodity & Resource Information	3e1
AnnCtyEOC(I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
AnnCtyEOC(I)	Implementation of Relocation/Reentry/Return Decisions	3f1

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
DoC EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
DoC EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
DoC EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
DoCo BuRA	Communications Equipment	1d1
DoCo BuRA	Equipment and Supplies to Support Operations	1e1
DoCo BuRA	Implementation of Emergency Worker Exposure Control	3a1
DoCo BuRA	Activation of the Back-up ANS	5a3
DoCo EOC	Communications Equipment	1d1
DoCo EOC	Equipment and Supplies to Support Operations	1e1
DoCo EOC	Emergency Worker Exposure Control Decisions	2a1
DoCo EOC	PAD decision-making process and coordination for the General Public	2b2
DoCo EOC	PADs for disabilities & access/functional needs people	2c1
DoCo EOC	Activation of the Prompt Alert & Notification System	5a1
DoCo EOC	Implementation of Emergency Worker Exposure Control	3a1
DoCo EOC	Implementation of KI PAD for Institutionalized Individuals/Public	3b1
DoCo EOC	Implementation of PADs for disabilities & access/functional needs people	3c1
DoCo EOC	Implementation of Traffic & Access Control	3d1
DoCo EOC	Direction and Control	1c1
DoCo EOC	Impediments to Evacuation	3d2
DoCo EOC	Emergency Information & Instructions for the Public/Media	5b1
DoCo EOC	Activation of the Back-up ANS	5a3
DoCo EOC	Mobilization	1a1
DoCo TACP	Equipment and Supplies to Support Operations	1e1
DoCo TACP	Implementation of Emergency Worker Exposure Control	3a1
DoCo TACP	Implementation of Traffic & Access Control	3d1
FarFxCoEOC(I)	Availability & use of Commodity & Resource Information	3e1
FarFxCoEOC(I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
FarFxCoEOC(I)	Implementation of Relocation/Reentry/Return Decisions	3f1
FarFxCoEOC(I)	Emergency Information & Instructions for the Public/Media	5b1
FlsCh EOC (I)	Availability & use of Commodity & Resource Information	3e1
FlsCh EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
FlsCh EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
FlsCh EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
FrdkCoEOC(I)	Availability & use of Commodity & Resource Information	3e1
FrdkCoEOC(I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
FrdkCoEOC(I)	Implementation of Relocation/Reentry/Return Decisions	3f1
FrdkCoEOC(I)	Emergency Information & Instructions for the Public/Media	5b1
GEL LAB	Implementation of Emergency Worker Exposure Control	3a1
GEL LAB	Laboratory Operations	4c1
HoCoEOc(i)	Availability & use of Commodity & Resource Information	3e1
HoCoEOc(i)	Emergency Information & Instructions for the Public/Media	5b1
HoCoEOc(i)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
HoCoEOc(i)	Implementation of Relocation/Reentry/Return Decisions	3f1
KtCo EOC (I)	Availability & use of Commodity & Resource Information	3e1
KtCo EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
KtCo EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
KtCo EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
MD AAC MDE	Emergency Worker Exposure Control Decisions	2a1
MD AAC MDE	Accident Assessment and PARs for the Emergency Event	2b1

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
MD AAC MDE	PAD decision-making process and coordination for the General Public	2b2
MD AAC MDE	Field Team Management	4a2
MD AAC MDE	Mobilization	1a1
MD AAC MDE	Communications Equipment	1d1
MD AAC MDE	Equipment and Supplies to Support Operations	1e1
MD AAC MDE	Direction and Control	1c1
MD EOC	Mobilization	1a1
MD EOC	Equipment and Supplies to Support Operations	1e1
MD EOC	Accident Assessment and PARs for the Emergency Event	2b1
MD EOC	PAD decision-making process and coordination for the General Public	2b2
MD EOC	Communications Equipment	1d1
MD EOC	Implementation of Traffic & Access Control	3d1
MD EOC	Activation of the Prompt Alert & Notification System	5a1
MD EOC	Direction and Control	1c1
MD IFST 1	Post Plume Phase Field Measurements & Sampling	4b1
MD IFST 1	Communications Equipment	1d1
MD IFST 1	Equipment and Supplies to Support Operations	1e1
MD IFST 1	Implementation of Emergency Worker Exposure Control	3a1
MD IFST 2	Communications Equipment	1d1
MD IFST 2	Equipment and Supplies to Support Operations	1e1
MD IFST 2	Implementation of Emergency Worker Exposure Control	3a1
MD IFST 2	Post Plume Phase Field Measurements & Sampling	4b1
MD JIC Brstw	Mobilization	1a1
MD JIC Brstw	Communications Equipment	1d1
MD JIC Brstw	Emergency Information & Instructions for the Public/Media	5b1
MD SEOC JIC (I)	Mobilization	1a1
MD SEOC JIC (I)	Communications Equipment	1d1
MD SEOC JIC (I)	Emergency Information & Instructions for the Public/Media	5b1
MD SFMT A	Mobilization	1a1
MD SFMT A	Communications Equipment	1d1

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
MD SFMT A	Implementation of Emergency Worker Exposure Control	3a1
MD SFMT A	Equipment and Supplies to Support Operations	1e1
MD SFMT A	Plume Phase Field Measurement, Handling, & Analyses	4a3
MD SFMT B	Mobilization	1a1
MD SFMT B	Communications Equipment	1d1
MD SFMT B	Implementation of Emergency Worker Exposure Control	3a1
MD SFMT B	Equipment and Supplies to Support Operations	1e1
MD SFMT B	Plume Phase Field Measurement, Handling, & Analyses	4a3
MDACCEOFBrst	Mobilization	1a1
MDACCEOFBrst	Communications Equipment	1d1
MDACCEOFBrst	Equipment and Supplies to Support Operations	1e1
MDACCEOFBrst	Direction and Control	1c1
MDACCEOFBrst	Emergency Worker Exposure Control Decisions	2a1
MDACCEOFBrst	Accident Assessment and PARs for the Emergency Event	2b1
MDACCEOFBrst	PAD decision-making process and coordination for the General Public	2b2
MDACCEOFBrst	Field Team Management	4a2
MDACCMDEIPCC	Direction and Control	1c1
MDACCMDEIPCC	Radiological Assessment & Decision-making for Ingestion Pathway	2d1
MDACCMDEIPCC	Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1
MDACCMDEIPCC	Availability & use of Commodity & Resource Information	3e1
MontCoEOC(I)	Availability & use of Commodity & Resource Information	3e1
PGC EOC (I)	Availability & use of Commodity & Resource Information	3e1
QACo EOC (I)	Availability & use of Commodity & Resource Information	3e1
QACo EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
QACo EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
QACo EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
SMC EOC (I)	Availability & use of Commodity & Resource Information	3e1
SMC EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
SMC EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
SMC EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
SMCo EOC	Implementation of Emergency Worker Exposure Control	3a1
SMCo EOC	Implementation of KI PAD for Institutionalized Individuals/Public	3b1
SMCo EOC	Implementation of PADs for disabilities & access/functional needs people	3c1
SMCo EOC	Mobilization	1a1
SMCo EOC	Communications Equipment	1d1
SMCo EOC	Equipment and Supplies to Support Operations	1e1
SMCo EOC	Direction and Control	1c1
SMCo EOC	Implementation of PADs for Schools	3c2
SMCo EOC	Implementation of Traffic & Access Control	3d1
SMCo EOC	Impediments to Evacuation	3d2
SMCo EOC	Emergency Worker Exposure Control Decisions	2a1
SMCo EOC	Emergency Information & Instructions for the Public/Media	5b1
SMCo EOC	PAD decision-making process and coordination for the General Public	2b2
SMCo EOC	Activation of the Back-up ANS	5a3
SMCo EOC	PADs for disabilities & access/functional needs people	2c1
SMCo EOC	Activation of the Prompt Alert & Notification System	5a1
SMCo PS GHES	Implementation of PADs for Schools	3c2
SMCo TACP	Equipment and Supplies to Support Operations	1e1
SMCo TACP	Implementation of Emergency Worker Exposure Control	3a1
SMCo TACP	Implementation of Traffic & Access Control	3d1
Star98	Communications Equipment	1d1
Star98	Activation of the Prompt Alert & Notification System	5a1

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant Exercise		
Location Abbreviated	**Criteria Title**	**Criteria**
TlbtCo EOC (I)	Availability & use of Commodity & Resource Information	3e1
TlbtCo EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
TlbtCo EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
TlbtCo EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
WaCoEOC(I)	Availability & use of Commodity & Resource Information	3e1
WaCoEOC(I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
WaCoEOC(I)	Implementation of Relocation/Reentry/Return Decisions	3f1
WaCoEOC(I)	Emergency Information & Instructions for the Public/Media	5b1
WDCHSEMAEOC(I)	Availability & use of Commodity & Resource Information	3e1
WiCo EOC (I)	Availability & use of Commodity & Resource Information	3e1
WiCo EOC (I)	Preprinted Materials for Implementing PADs for Commodities & Resources	3e2
WiCo EOC (I)	Implementation of Relocation/Reentry/Return Decisions	3f1
WiCo EOC (I)	Emergency Information & Instructions for the Public/Media	5b1
WoCo EOC (I)	Availability & use of Commodity & Resource Information	3e1

3.3 Criteria Evaluation Summaries

3.3.1 State Jurisdictions

3.3.1.1 Maryland State Emergency Operations Center

a. MET: 1.c.1, 1.d.1, 1.e.1, 2.d.1, 2.e.1, 3.d.1, 3e.1, 3.e.2, 3.f.1, 5.b.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e. PRIOR ISSUES: RESOLVED: NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.1.2 Maryland State Emergency Operations Center Joint Information Center

a. MET: 1.a.1, 1.d.1, 5.b.1

b. LEVEL 1 FINDINGS; NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.1.3 Maryland Accident Assessment Center, Baltimore

a. MET: 1.c.1, 1.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2, 4.a.2

b. LEVEL 1 FINDINGS; NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES:

ISSUE FOR CRITERION: 4c1

CONDITION: There is crucial information that needs to be provided by the State of Maryland to the contract General Engineering Laboratories (GEL) for ingestion sampling analyses.

POSSIBLE CAUSE: With the closing of the Maryland Department of Environment Laboratory, a contract laboratory (GEL) was chosen to count the ingestion sampling media. However, there are important counting parameters that need to be supplied to GEL that cannot be found in the agreement or procedure.

REFERENCE: NUREG-0654/FEMA-REP1, C.3, J.11 and EP-601, "Laboratory Procedures for Radiological Emergencies"

EFFECT: If requirements and counting parameters are not specified to the contract laboratory, it could result in a delay in receiving, preparing, analyzing, and reporting ingestion sampling data, which is used to make protective action decisions for the public.

RECOMMENDATION:

Include the following items in the Memorandum of Agreement, procedure, or by other written documents and provide them to the contract laboratory:

1. Sample retention time, if samples are to be retained greater than 30 days;
2. If meat and fish samples should be counted whole or prepared with only the edible portions;
3. If soil samples should be dried or quick counted as wet samples;
4. Units to be reported for each sample media, as compared to ingestion calculation spreadsheets;
5. List of radionuclides to be included in the sample report and their respective Minimum Detectable Activities, to reduce sample turn-around time;
6. Chain-of-custody form or method that will be used when sending samples to GEL;
7. Comparison of sampling volumes for each media type with amount of material that is needed for counting, to potentially reduce sampling time and shipment volume.

CORRECTIVE ACTION DEMONSTRATED: The Procedure MDE-601 Laboratory Procedures for Radiological Emergencies Sample Processing and Preparation Sample Analysis Reporting Results was updated to address the items above.

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.1.4 Maryland Accident Assessment Center, Barstow

a. MET: 1.c.1, 1.a.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS

ISSUE FOR CRITERION: 4.a.2

CONDITION: Field Monitoring Teams Alpha and Bravo were not provided the entire Protective Action Decision (PAD) by the Field Monitoring Team Leader to ingest Potassium Iodide.

POSSIBLE CAUSE: The Field Monitoring Team Leader failed to communicate the complete Protective Action Decision to Field Monitoring Teams Alpha & Bravo, which included the message that emergency workers should ingest Potassium Iodide.

REFERENCE: NUREG-0654/FEMA-REP-1, rev 1, C.1; H.12; I.7, 8, 11; J.10a

EFFECT: The field monitoring teams could potentially have been exposed radioactive I-131 while completing radiological surveys as part of their sampling activities.

REDEMONSTRATION: Following retraining of the communication and coordination of the PAD the Field Team Leader properly communicated with the Field Monitoring Team in the field and confirmed receipt of the proper information. This step is now included in the Field Monitoring Team Leader Checklist or procedure reducing the probability of missing this critical action again.

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.1.5 Maryland Department of the Environment Field Monitoring Team A

a. MET: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.3

b. LEVEL 1 FINDINGS; NONE

c. LEVEL 2 FINDINGS: 4.a.3

ISSUE FOR CRITERION: 4.a.3

CONDITION: Monitoring Team A did not adequately demonstrate the capability to take an air sample using the RADECO Air Sampler during the plume phase.

POSSIBLE CAUSE: The Maryland State Field Monitoring Team A did not receive sufficient training to be knowledgeable in the procedure to take an air sample, or the written procedures in the plans were not sufficient to allow team members to correctly take an air sample.

REFERENCE: NUREG-0654/FEMA-REP-1, C.1; H.12: I.8, 9; J.10.a

EFFECT: FMT A would not have been able to take an air sample that could be relied upon, and the amount of time required to take and process an air sample would have delayed necessary field monitoring.

CORRECTIVE ACTION DEMONSTRATED: Following retraining the air sampling was redemonstrated on September 13, and FMT A successfully demonstrated the capability take an air sample.

d. PLAN ISSUES:

ISSUE FOR CRITERION: 4a3

CONDITION: There is no Memorandum of Understanding or Agreement in place to perform plume phase air sample analysis.

POSSIBLE CAUSE: With the closing of the Maryland State Lab and the proposed use of contract laboratories for post-plume phase sample analyses, there is no written provision for counting plume phase air samples.

REFERENCE: NUREG-0654/FEMA-REP1, H.12 and EP-601, "Laboratory Procedures for Radiological Emergencies"

EFFECT: Without an agreement in place to count air samples, there may be delays in verifying plume data that was used in making protective action decisions for the public.

RECOMMENDATIONS:

1. Include process for counting plume phase air samples in EP-601.

2. Obtain a Memorandum of Understanding or Agreement if using local laboratories for air sample analyses.

3. If using a contract laboratory, include this sample media in the Agreement and ensure that correct filter and cartridge geometries are available for analysis.

CORRECTIVE ACTION DEMONSTRATED: EP-601 was updated to include the process for counting plume phase air samples and their analyses.

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.1.6 Maryland Department of the Environment Field Monitoring Team B

a. MET: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.3

b. LEVEL 1 FINDINGS; NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.1.7 Maryland Department of the Environment Field Sampling Team

a. MET: 1.d.1, 1.e.1, 3.a.1, 4.b.1

b. LEVEL 1 FINDINGS; NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES:

ISSUE FOR CRITERION: 1e1

CONDITION: There is no procedural guidance or protocol for source checking the ThermoScientific RadEye B20-ER survey meter.

POSSIBLE CAUSE: This instrument is relatively new to field operations and has not been added to the procedure or given a source check tag with a range of acceptable readings.

REFERENCE: NUREG-0654/FEMA-REP1, H.10 and EP-302, "Ambient Radiation Monitoring and Air Sampling".

EFFECT: There is no guidance for source checking the RadEye survey instrument, which was used in the field ingestion sampling to measure exposure rate. Therefore, the instrument was not source checked prior to use. Possible malfunctions with the meter might not be detected without an accurate source check.

RECOMMENDATION:

1. Include applicable instructions for the RadEye in EP-302.
2. Make a source check tag for the RadEye with instructions for source checking the meter, including a range of acceptable readings, with the manufacturer supplied Lu-176 source.
3. Train field team members on the RadEye source check protocols.

CORRECTED ACTION DEMONSTRATED: Instructions were added to the RadEYE in EP-302.

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2 Risk Jurisdictions

3.3.2. 1 Calvert County Emergency Operations Center

a. MET: 1.c.1, 5.a.3, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 5.a.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.b.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 Calvert County Traffic and Access Control

a. MET: 1.e.1, 3.a.1, 3.d.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 Calvert County Public Schools, Mutual Elementary School

a. MET: 3.c.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. 4 Calvert County Public Schools, Patuxent High School

a. MET: 3.c.2

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2. 5 Dorchester County Emergency Operations Center

a. MET: 1.c.1, 5.a.3, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 5.a.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.b.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 Dorchester County Back-up Route Alerting

a. MET: 1.d.1, 1.e.1, 3.a.1, 5.a.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. 7 Dorchester County Monitoring and Decontamination Center, Dorchester County Career and Technology Center

a. MET: 6.a.1, 6.b.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED :

ISSUE NO: 11-15-6a1-L2-1

CRITERION: Monitoring, Decontamination, & Registration of Evacuees

CONDITION: The process used in vehicle monitoring and decontamination allowed for cross-contamination. Contaminated vehicles were directed to drive down through the clean area.

POSSIBLE CAUSE: The designated vehicle monitoring team was unfamiliar with the facility procedures for processing contaminated vehicles.

REFERENCE: NUREG-0654/FEMA-REP-1: K.5.a, b.

EFFECT: Contaminated vehicles could be allowed to exit the decontamination area and cross-contaminate other vehicles and personnel.

CORRECTIVE ACTION DEMONSTRATED: A revised the site plan diagram with designated paths for clean and contaminated vehicles and proper vehicle decontamination procedures were demonstrated by monitoring and decontamination staff for evacuee and emergency worker vehicles during a redemonstration exercise on August 14, 2017.

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2. 8 Dorchester County Reception Center, Dorchester County Career and Technology Center

a. MET: 6.a.1.; 6.b.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED :

ISSUE NO: 11-15-6a1-L2-2

CRITERION: Monitoring, Decontamination, & Registration of Evacuees

CONDITION: The Dorchester County Career and Technology Center Reception Center Manager did not report to the County Emergency Management pertinent information on the results of monitoring. A person was not designated as the manager.

POSSIBLE CAUSE: The Reception Center Manager position was not assigned at the initial activation and/or no one was trained to assume the responsibility.

REFERENCE: NUREG-0654/FEMA-REP-1: A.3; C.4; J.10.h; J.12

EFFECT: Without someone assigned to report pertinent information to the County Emergency Management, the support that the location provides to the public (monitoring/decontamination and medical treatment) could be delayed.

CORRECTIVE ACTION DEMONSTRATED: The designated individual identified in the plan as a reception center manager was

retrained in the role. The reception center operations were demonstrated during a redemonstration exercise on August 14, 2017.

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2. 9 Dorchester County Traffic and Access Control

a. MET: 1.e.1, 3.a.1, 3.d.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. 10 St. Mary's County Emergency Operations Center

a. MET: 1.c.1, 5.a.3, 1.d.1, 1.e.1,2.a.1, 2.b.2, 2.c.1, 5.a.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.b.1, 1.a.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. 11 St. Mary's County Public Schools, Green Holly Elementary School

a. MET: 3.c.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. 12 St. Mary's County Traffic and Access Control

a. MET: 1.e.1, 3.a.1, 3.d.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

3.3.3 Support Jurisdictions

3.3.2. 13 Annapolis City Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 14 Anne Arundel County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 15 Arlington County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 16 Baltimore County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 17 Caroline County MD Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 18 Carroll County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 19 Cecil County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 20 Charles County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 21 City of Alexandria Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 22 City of Baltimore Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 23 Fairfax Co Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 24 Falls Church Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 25 Frederick County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2. 26 Harford County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 27 Howard County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2. 28 Kent, MD, County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

3.3.2. 29 Montgomery County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 30 Prince Georges County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 31 Queen Anne's County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 32 Somerset County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 33 Talbot County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 34 Washington County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 35 Washington, DC Homeland Security Emergency Management Agency EOC (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 36 Wicomico County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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. 37 Worcester County Emergency Operations Center (I)

a. MET: 3.e.1, 3.e.2, 3.f.1, 5.b.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

3.3.3 Private Jurisdictions

3.3.4. 1 GEL Laboratories LLC

a. MET: 1.e.1, 3.a.1, 4.c.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

3.3.4. 2 Star 98.3 Radio Station

a. MET: 1.d.1, 5.a.1

b. LEVEL 1 FINDINGS: NONE

c. LEVEL 2 FINDINGS: NONE

d. PLAN ISSUES: NONE

e: PRIOR ISSUES: RESOLVED : NONE

f. PRIOR ISSUES: UNRESOLVED: NONE

SECTION 4: DEMONSTRATED STRENGTHS

4.1 State Jurisdictions

4.1.1 The MEMA utilizes an Operational Tempo Board, which is broadcast on the monitors to allow all SEOC staff to view. This Ops Tempo Board also enforces key decision-making times and allows the SEOC Commander to facilitate briefings. MEMA also broadcast coordination calls with Risk Jurisdictions throughout the SEOC. This provided situational awareness to all SEOC Command and Support staff.

4.1.2 During CALVEX17, MEMA was managing several events simultaneously. MEMA staff were processing EMAC requests for Hurricanes Irma and Harvey, activated an Opioid Task Force, and executed the Plume Phase portion of CALVEX17 in the SEOC. The ability to manage several incidents simultaneously demonstrated that Maryland's public safety officials are well versed in all-hazards emergency management practices and has the staffing level needed to handle multiple incidents at the same time.

4.1.3 During CALVEX17, MEMA deployed a new, geospatial mapping tool titled OSPREY. The system brings together data from multiple automated sources in near real-time and presents it visually. OSPREY was activated to show the Calvert Cliffs EPZ with overlays of wind direction, and special care facilities such as nursing homes.

4.2 Risk Jurisdictions

4.2.1 At the Calvert County EOC, early precautionary relocation was timely as all was completed almost 1-hour prior to the decision to evacuate in zones 1, 2, 4, and 5. This ensured the students and staff were out of the emergency area and the buses/drivers were then available to assist in the evacuation if required.

4.2.2 St. Mary's County has retained their former Emergency Communications Center (ECC), which is within a two minute drive of the newer one (used since 2000), and kept it up-to-date, including using it for one day a month as a test, so they have full backup for their ECC.

4.2.3 St. Mary's County uses an emergency worker exposure control video briefing for just-in-time refresher training. The video is very clear and concise, and can be accessed from any location.

4.2.4 St. Mary's County EOC uses their EOC to the fullest extent to include the four walls of the EOC. The walls were recently painted with a magnetic paint (allowing the use of magnetic signs to show different positions/ECL levels, etc.). After an exercise, activation, or other event, photos of the information contained on the walls may be used for additional follow up or to assist with any after action items/reports.

4.2.5 Throughout the exercise, the Dorchester County EMD coordinated and facilitated local decision making with enthusiasm, ensuring EOC staff had good situational awareness. She allowed staff the freedom to fulfill their responsibilities with a minimum amount of guidance and sought their input as appropriate.

4.2.6 Dorchester County EOC staff coordinated emergency response activities efficiently and effectively. Communications between each agency and their ability to plan ahead utilizing their checklist were excellent. Knowledge of roles and responsibilities among leadership on through administrative staff appeared cohesive.

SECTION 5: CONCLUSION

The State of Maryland and local jurisdictions, except where noted in this report demonstrated knowledge of their Radiological Emergency Response plans and procedures. The plans and procedures were adequately implemented during the Calvert Cliffs Nuclear Power Plant Post-Plume exercise evaluated on September 12-14, 2017, and the Out of Sequence Exercise conducted on August 14, 2017 and December 1, 2017.

FEMA evaluators provided analyses of 206 evaluation criteria. These analyses resulted in a determination of no Level 1 Findings, two Level 2 Findings, and three Plan Issues.

Based on the results of the exercise and a review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate (meet the planning and preparedness standards of NUREG-0654/FEMA-REP-1, Revision 1, November 1980, as referenced in 44 CFR 350.5) and there is reasonable assurance they can be implemented, as demonstrated during this exercise.

APPENDIX A: EXERCISE TIMELINE

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant

Emergency Classification Level or Event	Time Utility Declared	Maryland EOC	MDE Accident Assessment Barstow	MDE Accident Assessment Baltimore	JIC	Calvert County EOC	St. Mary's County EOC	Dorchester County EOC
Unusual Event								
Alert	0811	0819	0819	0823	0822	0824	0819	0819
Site Area Emergency	1019	1030	1019	1028	1019	1026	1025	1025
General Emergency	1142	1152	1143	1144	1144	1148	1148	1146
Simulated Radiation Release Started			0937	1015	0937	1011	1009	1015
Simulated Radiation Release Terminated		On-going	On-going	On-going	On-going	On-going	On-going	On-going
Facility Declared Operational		0845	1010	0918	0913	0856	0825	0830
Governor's Declaration of State of Emergency		1042	1115		1115	1123		
Exercise Terminated		1234	1230	1235	1222	1238	1234	1239
First Precautionary/Protective Actions: Describe: Agriculture: farm animals on store feed and covered water 10 miles of the plant. Risk schools in Calvert and St. Mary's Counties relocate to host school. Water Restrictions: Bay Bridge south to point lookout all waterways. Close all parks and recreation areas in Calvert and St. Mary's Counties. No KI for EW's.		1050	1050	1057	1037	1016	1050	1050
Siren Sounding		1100	1100	1100	1100	1100	1100	1100
EAS Broadcast time		1103	1103	1103	1103	1103	1103	1103
Second Precautionary/ Protective Actions: Describe Evac Zones 1,2,4,5; Shelter Zones 3,6,7 Agriculture 50 miles; Restrict Air space 10 miles 360		1210	1210	1235	1207	1210	1210	1210
Siren Sounding		1220	1220	1220	1220	1220	1220	1220
EAS Message Broadcast		1223	1223	1223	1223	1223	1223	1223
Decision to take KI: EWs, General Public Zones 1,2,4,5		1210	1210	1235	1202	1210	1210	1210

APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

September 12-14, 2017 Calvert Cliffs Nuclear Power Plant

LOCATION	TEAM LEADER	AGENCY
Annapolis City Emergency Operations Center (I)	John Price	FEMA RIII
Anne Arundel County Emergency Operations Center (I)	John Price	FEMA RIII
Arlington County Emergency Operations Center (I)	John Price	FEMA RIII
Baltimore County Emergency Operations Center (I)	John Price	FEMA RIII
Calvert County Emergency Operations Center	Patricia Gardner	FEMA RIII
Calvert County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Calvert County Public Schools, Mutual Elementary School	Barton Freeman	FEMA RIII
Calvert County Public Schools, Patuxent High School	Barton Freeman	FEMA RIII
Calvert County Traffic and Access Control	Patricia Gardner	FEMA RIII
Caroline County MD Emergency Operations Center (I)	John Price	FEMA RIII
Carroll County Emergency Operations Center (I)	John Price	FEMA RIII
Cecil County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Charles County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
City of Alexandria Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
City of Baltimore Emergency Operations Center (I)	John Price	FEMA RIII
Delaware Field Sampling Team	Cheryl Weaver	Contractor
Delaware State Emergency Operations Center & Joint Information Center	William McDougall	FEMA RIII
Delaware Technical Assessment Center	Cheryl Weaver	Contractor
Dorchester County Back-up Route Alerting	Lisa Rink	Region 04
Dorchester County Emergency Operations Center	Patricia Gardner	FEMA RIII
Dorchester County Emergency Operations Center	Lisa Rink	Region 04
Dorchester County Monitoring and Decontamination Center, Dorchester County Caree	Patricia Gardner	FEMA RIII
Dorchester County Reception Center, Dorchester County Career and Technology Cent	Patricia Gardner	FEMA RIII
Dorchester County Traffic and Access Control	Lisa Rink	FEMA RIV
Fairfax Co Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Falls Church Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Frederick County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII

GEL Laboratories LLC	Michael Shuler	FEMA RIII
Harford County Emergency Operations Center (I)	John Price	FEMA RIII
Howard County Emergency Operations Center (I)	John Price	FEMA RIII
Kent County, DE, Emergency Operations Center (I)	William McDougall	FEMA RIII
Kent, MD, County Emergency Operations Center (I)	John Price	FEMA RIII
Maryland Accident Assessment Center, Maryland Department of the Environment	Kenneth Wierman	FEMA HQ
Maryland Emergency Operations Center	John Price	FEMA RIII
Maryland Ingestion Field Sampling Team 1	Michael Shuler	FEMA RIII
Maryland Ingestion Field Sampling Team 2	Michael Shuler	FEMA RIII
Maryland Joint Information Center, Barstow	John Rice	FEMA RI
Maryland St Accident Assessment Center/MD Dept of Environ/Ingstn Pthwy Coord Cnt	Kenneth Wierman	FEMA HQ
Maryland State Accident Assessment Center, Emergency Operations Facility Barstow	Michael Shuler	FEMA RIII
Maryland State Emergency Operations Center/Joint Information Center (Ingestion)	John Price	FEMA RIII
Maryland State Field Monitoring Team A	Kenneth Wierman	FEMA HQ
Maryland State Field Monitoring Team B	Kenneth Wierman	FEMA HQ
Montgomery County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Prince Georges County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Queen Anne's County Emergency Operations Center (I)	John Price	FEMA RIII
Somerset County Emergency Operations Center (I)	John Price	FEMA RIII
St. Mary's County Emergency Operations Center	Patricia Gardner	FEMA RIII
St. Mary's County Emergency Operations Center	Tina Lai-Thomas	FEMA RIII
St. Mary's County Public Schools, Green Holly Elementary School	Barton Freeman	FEMA RIII
St. Mary's County Traffic and Access Control	Rebecca Thomson	Contractor
Star 98.3 Radio Station	John Price	FEMA RIII
Sussex County, DE, Emergency Operations Center (I)	William McDougall	FEMA RIII
Talbot County Emergency Operations Center (I)	John Price	FEMA RIII
Teledyne Brown Laboratories	Nicholas Buls	FEMA RIII
Washington County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII

Washington, DC Homeland Security Emergency Management Agency EOC (I)	Patricia Gardner	FEMA RIII
Wicomico County Emergency Operations Center (I)	Patricia Gardner	FEMA RIII
Worcester County Emergency Operations Center (I)	John Price	FEMA RIII

LOCATION	EVALUATOR	AGENCY
Annapolis City Emergency Operations Center (I)	Roy Smith	Contractor
Anne Arundel County Emergency Operations Center (I)	Roy Smith	Contractor
Arlington County Emergency Operations Center (I)	Barbara Thomas	FEMA RI
Baltimore County Emergency Operations Center (I)	Tina Lai-Thomas	FEMA RIII
Calvert County Emergency Operations Center	Patricia Gardner	FEMA RIII
Calvert County Emergency Operations Center	Alonzo McSwain	FEMA HQ
Calvert County Emergency Operations Center	Lynn Steffensen	Contractor
Calvert County Emergency Operations Center	Roy Smith	Contractor
Calvert County Emergency Operations Center (I)	John Rice	FEMA RI
Calvert County Public Schools, Mutual Elementary School	Lynn Steffensen	Contractor
Calvert County Public Schools, Patuxent High School	Barton Freeman	FEMA RIII
Calvert County Traffic and Access Control	Alonzo McSwain	FEMA HQ
Caroline County MD Emergency Operations Center (I)	Barton Freeman	FEMA RIII
Carroll County Emergency Operations Center (I)	Richard Smith	Contractor
Cecil County Emergency Operations Center (I)	Taneeka Hollins	FEMA RI
Charles County Emergency Operations Center (I)	Kathy Duran	FEMA RIII
City of Alexandria Emergency Operations Center (I)	Barbara Thomas	FEMA RI
City of Baltimore Emergency Operations Center (I)	Tina Lai-Thomas	FEMA RIII
Dorchester County Back-up Route Alerting	Marcy Campbell	Contractor
Dorchester County Emergency Operations Center	Lisa Rink	FEMA RIV
Dorchester County Emergency Operations Center	Deborah Blunt	Contractor
Dorchester County Emergency Operations Center	Michael Meshenberg	Contractor
Dorchester County Emergency Operations Center	Paul Nied	Contractor
Dorchester County Traffic and Access Control	Deborah Blunt	Contractor
Fairfax Co Emergency Operations Center (I)	Ronald Bonner	Contractor
Falls Church Emergency Operations Center (I)	Ronald Bonner	Contractor
Frederick County Emergency Operations Center (I)	Michael Meshenberg	Contractor
GEL Laboratories LLC	Jill Leatherman	Contractor
Harford County Emergency Operations Center (I)	Taneeka Hollins	FEMA RI
Howard County Emergency Operations Center (I)	Richard Smith	Contractor

Kent, MD, County Emergency Operations Center (I)	Gary Goldberg	Contractor
Maryland Accident Assessment Center, Maryland Department of the Environment	Kenneth Wierman	FEMA HQ
Maryland Accident Assessment Center, Maryland Department of the Environment	Brad McRee	Contractor
Maryland Emergency Operations Center	Barbara Thomas	FEMA RI
Maryland Emergency Operations Center	John Price	FEMA RIII
Maryland Emergency Operations Center	Michael Shuler	FEMA RIII
Maryland Emergency Operations Center	Richard Smith	Contractor
Maryland Ingestion Field Sampling Team 1	Deborah Blunt	Contractor
Maryland Ingestion Field Sampling Team 2	Jill Leatherman	Contractor
Maryland Joint Information Center, Barstow	John Rice	FEMA RI
Maryland St Accident Assessment Center/MD Dept of Environ/Ingstn Pthwy Coord Cnt	Kenneth Wierman	FEMA HQ
Maryland St Accident Assessment Center/MD Dept of Environ/Ingstn Pthwy Coord Cnt	Michael Shuler	FEMA RIII
Maryland State Accident Assessment Center, Emergency Operations Facility Barstow	Taneeka Hollins	FEMA RI
Maryland State Accident Assessment Center, Emergency Operations Facility Barstow	Michael Shuler	FEMA RIII
Maryland State Emergency Operations Center/Joint Information Center (Ingestion)	John Zeidler	Contractor
Maryland State Field Monitoring Team A	Gary Goldberg	Contractor
Maryland State Field Monitoring Team B	Jill Leatherman	Contractor
Montgomery County Emergency Operations Center (I)	Alonzo McSwain	FEMA HQ
Prince Georges County Emergency Operations Center (I)	Alonzo McSwain	FEMA HQ
Queen Anne's County Emergency Operations Center (I)	Gary Goldberg	Contractor
Somerset County Emergency Operations Center (I)	Rebecca Thomson	Contractor
St. Mary's County Emergency Operations Center	John Rice	FEMA RI
St. Mary's County Emergency Operations Center	Kathy Duran	FEMA RIII
St. Mary's County Emergency Operations Center	Tina Lai-Thomas	FEMA RIII
St. Mary's County Emergency Operations Center	Rebecca Thomson	Contractor
St. Mary's County Emergency Operations Center	Ronald Bonner	Contractor
St. Mary's County Public Schools, Green Holly Elementary School	John Zeidler	Contractor
St. Mary's County Traffic and Access Control	Kathy Duran	FEMA RIII
Star 98.3 Radio Station	Barton Freeman	FEMA RIII
Talbot County Emergency Operations Center (I)	Barton Freeman	FEMA RIII
Washington County Emergency Operations Center (I)	Michael Meshenberg	Contractor

Washington, DC Homeland Security Emergency Management Agency EOC (I)	Lisa Rink	FEMA RIV
Wicomico County Emergency Operations Center (I)	Paul Nied	Contractor
Worcester County Emergency Operations Center (I)	Rebecca Thomson	Contractor

APPENDIX C: ACRONYMS AND ABBREVIATIONS

CCNPP	Calvert Cliffs Nuclear Power Plant
CFR	Code of Federal Regulations
DOE-FRMAC	United States Department of Energy – Federal Radiological Monitoring and Assessment Center
EPA	United States Environmental Protection Agency
EPZ	Emergency Planning Zone
FEMA	Federal Emergency Management Agency
NRC	Nuclear Regulatory Commission
RAC	Radiological Assistance Committee
RACES	Radio Amateur Civil Emergency Services
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plans
ORO	Offsite Response Organizations
PAR	Protective Action Recommendation
NPP	Nuclear Power Plant
PAD	Protective Action Decision
ECC	Emergency Communications Center
EOP	Extent of Play

APPENDIX D: EXERCISE PLAN

Method of Operations and Extent of Play (EOP)

Sub-element 1.a. – Mobilization

Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654/FEMA-REP-1, A.1.a, e; A.3, 4; C.1, 4, 6; D.4; E.1, 2; G.3.a; H.3, 4)

INTENT

This Sub-element is derived from NUREG-0654/FEMAREP-1, which requires that OROs have the capability to alert, notify, and mobilize emergency personnel, and activate and staff emergency facilities.

EXTENT OF PLAY

Responsible ORO's must demonstrate the capability to receive notification of an incident from the licensee; verify the notification, contact, alert, and mobilize key emergency personnel in a timely manner, and demonstrate the ability to maintain and staff 24-hour operations. 24-hour operations can be demonstrated during the exercise via rosters or shift changes or otherwise in an actual activation. Local and/or Tribal responders must demonstrate the ability to receive and/or initiate notification to the licensees or other respective emergency management organizations of an incident in a timely manner when they receive information from the licensee or alternate sources.

Responsible ORO's must demonstrate the activation of facilities for immediate use by mobilized personnel upon their arrival. Activation of facilities and staff, including those associated with the ICS, must be completed in accordance with ORO plans/procedures. The location and contact information for facilities included in the incident command must be available to all appropriate responding agencies and the Nuclear Power Plant (NPP) after these facilities have been activated.

Pre-positioning of emergency personnel is appropriate, in accordance with the Extent-of-Play Agreement, at those facilities located beyond a normal commuting distance from the individual's duty location or residence. This includes the staggered release of resources form an assembly area. Additionally, pre-positioning of staff for out-of-sequence demonstrations may be used in accordance with the Extent-of-Play Agreement.

The REP program does not evaluate Incident Command Post (ICP) tactical operations (e.g. law enforcement hostile action suppression techniques), only coordination among the incident command, the utility, and all appropriate OROs, pursuant to plans/procedures.

Initial law enforcement, fire service, HAZMAT, and emergency medical response to the NPP site may impact the ability to staff REP functions. The ability to identify and request additional

resources or identify compensatory measures must be demonstrated. Exercises must also address the role of mutual aid in the incident, as appropriate. An integral part of the response to a hostile action-based (HAB) scenario at an NPP may also be within the auspices of the Federal government (e.g., Federal Bureau of Investigation (FBI), NRC, or DHS). Protocols for requesting Federal, State, local, and Tribal law enforcement support must be demonstrated, as appropriate. Any resources must be on the ORO's mobilization list so they can be contacted during an incident when needed.

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

State of Maryland/ Local Jurisdiction Extent of Play:

During the plume phase exercise activities on September 12, 2017 responders will pre-stage at various locations to reduce the amount of travel time. Pre-staging within the facility is permitted but centers should not initiate activation until notification to mobilize and respond has been received. MEMA will mobilize only key State agencies at the Maryland EOC. Key State Agencies are: MEMA, Maryland Military Department/National Guard, Maryland Department of the Environment, Maryland Department of Health and Mental Hygiene, Maryland Department of Natural Resources, Maryland Department of Agriculture, Maryland Department of Transportation, Maryland State Police, Maryland Department of Education and the Maryland Institute for Emergency Medical Services Systems.

1. The Maryland Department of the Environment field monitoring teams (FMT) will pre-stage.

2. 24 hour rosters will be available for key players at each EOC.

3. Out of sequence locations for Reception Center Monitoring and Decontamination and Emergency Worker monitoring are pre-staged and set up prior to the evaluation.

4. Day Two assessment and Day Three table top exercise will all be pre-staged.

Locations evaluated:

- State EOC (SEOC)
- SEOC JIC
- State AAC (Baltimore and Prince Frederick)
- CCNPP JIC
- Calvert County
- St. Mary's County
- Dorchester County
- State Field Monitoring Teams

Outstanding Issues: None

Sub-element 1.c – Direction and Control

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654/FEMA-REP-1, A.1.d; A.2.a, b; A.3; C.4, 6)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to control their overall response to an emergency.

EXTENT OF PLAY

Leadership personnel must demonstrate the ability to carry out the essential management functions of the response effort (e.g., keeping staff informed through periodic briefings and/or other means, coordinating with other OROs, and ensuring completion of requirements and requests.) Leadership must demonstrate the ability to prioritize resource tasking and replace/supplement resources (e.g., through Memorandum of Understanding's (MOU) or other agreements) when faced with competing demands for finite resources. Any resources identified through LOA/MOUs must be on the ORO's mobilization list so they may be contacted during an incident, when needed.

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

State of Maryland/ Local Jurisdiction Extent of Play:

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

Locations evaluated:

SEPTEMBER 12, 2017

- State EOC
- State AAC (Baltimore and Prince Frederick)
- CCNPP JIC
- Calvert County
- St. Mary's County
- Dorchester County

SEPTEMBER 13, 2017

MDE AAC IPCC

Outstanding Issues: None

Sub-element 1.d – Communications Equipment

Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1., 2.)

INTENT:

This sub-element is derived from NUREG-0654, which provides that OROs should establish reliable primary and backup communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.

EXTENT OF PLAY

OROs must demonstrate that a primary system and at least one backup system are fully functional at all times. Communications systems are maintained and tested on a recurring basis throughout the assessment period and system status is available to all operators. Periodic test results and corrective actions are maintained on a real time basis. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed.

Locations evaluated:

- SEOC
- SEOC JIC
- State AAC (Baltimore and Prince Frederick)
- CCNPP JIC
- Radio Station (Star 98.3)
- State Field Monitoring Teams
- State Field Sampling Teams
- Calvert County
- St. Mary's County
- Dorchester County
- Dorchester County (Back Up Route Alerting)

Outstanding Issues: None

Sub-element 1.e – Equipment and Supplies to Support Operations

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a.b.e; J.11, 12; K.3.a; K.5.b)

INTENT

This sub-element is derived from NUREG-0654 REP-1, which requires that OROs have emergency equipment and supplies adequate to support the emergency response.

EXTENT OF PLAY

Assessment of this Demonstration Criterion is accomplished primarily through a baseline evaluation and subsequent periodic inspections. A particular facility's equipment and supplies must be sufficient and consistent with that facility's assigned role in the ORO's emergency operations plans. Use of maps and other displays is encouraged. For non-facility-based operations, the equipment and supplies must be sufficient and consistent with the assigned operational role. At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones, and signs) must be available, or their availability described.

Specific equipment and supplies that must be demonstrated under this criterion include Potassium Iodide (KI) inventories, dosimetry, and monitoring equipment, as follows:

KI: Responsible OROs must be demonstrate the capability to maintain inventories of KI sufficient for use by: (1) emergency workers; (2) institutionalized individuals, as indicated in capacity lists for facilities; and (3) where stipulated by the plans/procedures, members of the general public (including transients) within the plume pathway EPZ. In addition, OROs must demonstrate provisions to make KI available to specialized response teams (e.g., civil support team, Special Weapons and Tactics Teams, urban search and rescue, bomb squads, HAZMAT, or other ancillary groups) as identified in plans/procedures. The plans/procedures must include the forms to be used for documenting emergency worker ingestion of KI, as well as a mechanism for identifying emergency workers that have declined KI in advance. Consider carefully the placement of emergency workers that have declined KI in advance.

ORO quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at the storage locations(s) or through documentation of current inventory submitted during the exercise, provided in the ALC submission, and/or verified during an SAV. Available supplies of KI must be within the expiration date indicated on KI bottles or blister packs. As an alternative, the ORO may produce a letter from certified private or State laboratory indicating that the KI supply remains potent in accordance with U.S. Pharmacopoeia standards.

Dosimetry: Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers must be available for issuance to all emergency workers who will be dispatched to perform an ORO mission. In addition, OROs must demonstrate provisions to make dosimetry available to specialized response teams (e.g. civil support team, Special Weapons and Tactics Teams, urban search and rescue, bomb squads, HazMat, or other ancillary groups) as identified in plans/procedures.

Appropriate direct-reading dosimetry must allow an individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans/procedures.

Direct-reading dosimeters must be zeroed or operationally checked prior to issuance. The dosimeters must be inspected for electrical leakage at least annually and replaced when necessary. Civil Defense Victoreen Model 138s (CD V-138s) (0-200 mR), due to their documented history of electrical leakage problems, must be inspected for electrical leakage at least quarterly and replaced when necessary. This leakage testing will be verified during the exercise through documentation submitted in the ALC and/or through an SAV.

Operational checks and testing of electronic dosimeters must be in accordance with the manufacturer's instructions and be verified during the exercise, through documentation submitted in the ALC and/or through an SAV.

Monitoring Instruments: All instruments must be inspected, inventoried, and operationally checked before each use. Instruments must be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV-700 series instruments and other instruments without a manufacturer's recommendation must be calibrated annually. Modified CDV-700 instruments must be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration must be on each instrument or calibrated frequency can be verified by other means. In addition, instruments being used to measure activity must have a sticker-affixed to their sides indicating the effective range of the readings. The range of readings documentation specifies the acceptable range of readings that the meter should indicate when it is response-checked using a standard test source.

For FMTs, the instruments must be capable of measuring gamma exposure rates and detecting beta radiation. These instruments must be capable of measuring a range of activity and exposure, including radiological protection/ exposure control of team members and detection of activity on air sample collection media, consistent with the intended use of the instrument and the ORO's plans/procedures. An appropriate radioactive check source must be used to verify proper operational response for each low-range radiation measurement instrument (less than 1R/hr) and for a high-range instruments when available. Should a source not be available for a high-range instrument, a procedure must exist to operationally test the instrument before entering an area where only a high-range instrument can make useful readings.

In areas where portal monitors are used, the OROs must set up and operationally check the monitor(s). The monitor(s) must confirm to the standards set forth in the Contamination Monitoring Standard for a Portal Monitor Used for Emergency Response, FEMA-REP-21 (March 1995) or in accordance with the manufacturer's recommendations.

Mutual Aid Resources: Should the incoming resources arrive with their own equipment (i.e., monitors and/or dosimetry), they will be evaluated by REP Program standards. FEMA will not inventory equipment that is not part of the REP Program. Should an agency have a defined role

in the REP Plan, they are subject to the planning process and standards, as well as the guidance of this Manual.

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

State of Maryland/ Local Jurisdiction Extent of Play:

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Locations evaluated:

- SEOC (i.e. maps and displays)
- SEOC JIC
- State ACC (Baltimore and Prince Frederick)
- Calvert County
- St. Mary's County
- Dorchester County
- Dorchester County (Route Alerting)

Outstanding Issues: None

Sub-element 2.a – Emergency Worker Exposure Control

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers, including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654/FEMA-REP-1, C.6; f; K.3.a; K.4)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place, as specified in the ORO's plans/procedures, to authorize emergency worker exposure limits to be exceeded for specific missions.

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration TEDE or organ-specific limits) identified in the ORO's plans/procedures.

EXTENT OF PLAY

Assessment of this Demonstration Criterion must be assessed concurrently with a licensee exercise and may be demonstrated in a full scale, functional or tabletop exercise.

OROs authorized to send emergency workers into the plume exposure pathway EPZ must demonstrate a capability to comply with emergency worker exposure limits based on their emergency plans/procedures.

Participating OROs must also demonstrate the capability to make decisions concerning authorization of exposure levels in excess of pre-authorized levels and the number of emergency workers receiving radiation doses above pre-authorized levels. This would include providing KI and dosimetry in a timely manner to emergency workers dispatched onsite to support plant incident assessment and mitigating actions, in accordance with respective plans/procedures.

As appropriate, OROs must demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for emergency workers, based on their plans/procedures or projected thyroid dose compared with the established Protective Action Guide's (PAG) for KI administration.

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

State of Maryland Local Jurisdiction Extent of Play:

All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency. KI tablets for emergency workers will be simulated. (i.e. tic tacs or other simulated substitute). Distribution of simulated KI will be demonstrated. Actual distribution of KI will not be demonstrated. Actual self-reading dosimeters and permanent recording dosimeters will be issued.

Locations evaluated:

- AAC (Baltimore and Prince Frederick)
- Calvert County
- St. Mary's County
- Dorchester County

Outstanding Issues: None

Sub-element 2.b – Radiological Assessment, Protective Action Recommendations, and Precautionary and/or Protective Action Decisions for the Plume Phase of the Emergency

Criterion 2.b.1: Appropriate protective action recommendations (PARs) are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions. (NUREG-0654/FEMA-REP-1, I.10 and Supplement 3)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to independently project integrated dose from projected or actual dose rates and compare these estimates to the PAGs.

OROs must have the capability to choose among a range of protective actions those most appropriate in a given emergency. OROs base these choices on PAGs from their plans/procedures or EPA's Manual of Protective Action Guides and Protective Actions for Nuclear Incidents and other criteria, such as plant conditions, licensee PARs, coordination of precautionary and/or protective action decisions with other political jurisdictions (e.g., other affected OROs and incident command), availability of in-place shelter, weather conditions, and situations, to include HAB incidents, the threat posed by the specific hostile action, the affiliated response, and the effect of an evacuation on the threat response effort that create higher than normal risk from general population evacuation.

EXTENT OF PLAY

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a full-scale, functional or tabletop exercise.

During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO must demonstrate the capability to use appropriate means, described in the plans/procedures, to develop PARs for decision-makers based on available information and recommendations provided by the licensee as well as field monitoring data, when available. The ORO must also consider any release and meteorological data provided by the licensee.

The ORO must demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs must be appropriate to the scenario. In all cases, calculation of projected dose must be demonstrated. Projected doses must be related to quantities and units of the PAG to which they will be compared. PARs must be promptly transmitted to decision-makers in a pre-arranged format.

When the licensee and ORO projected doses differ by more than a factor of 10, the ORO and licensee must determine the source of the difference by discussing input data and assumptions, using different models, or exploring possible reasons. Resolution of these differences must be incorporated into the PARs when timely and appropriate. The ORO must demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

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

State of Maryland Negotiated Extent of Play:

All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency, NO release scenarios may require assessment of "what if" conditions or controller inject after the exercise to demonstrate dose projection capabilities.

Locations evaluated:

- SEOC
- State AAC (Baltimore and Prince Frederick)

Outstanding Issues: None

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make precautionary and/or protective action decisions for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654/FEMA-REP-1, A.3; C.4, 6; D.4; J.9; J.10.e, f; m)

EXTENT OF PLAY

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a full-scale, functional or tabletop exercise.

OROs must have the capability to make both initial and subsequent PADs. OROs must demonstrate the capability to make initial PADs in a timely manner appropriate to the incident, based on information from the licensee, assessment of plant status and potential or actual releases, other available information related to the incident, input from appropriate ORO authorities (e.g., incident command), and PARs from the utility and ORO staff. In addition, a subsequent or alternate PAD may be appropriate should various conditions (e.g., an HAB incident, weather, release timing and magnitude) pose undue risk to an evacuation, or should evacuation disrupt the efforts to respond to a hostile action.

OROs must demonstrate the ability to obtain supplemental resources (e.g., mutual aid) necessary to implement a PAD when local law enforcement, fire service, HAZMAT, and emergency medical resources are utilized to augment response to the NPP site or other key infrastructure.

Dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. In addition, incident command must provide input regarding considerations for subsequent PARs based on the magnitude of the ongoing threat, the response, and/or site conditions. The decision-makers must demonstrate the capability to change protective actions based on the combination of all these factors.

Should the ORO determine that KI will be used as a protective measure for the general public under offsite plans/procedures, then it must demonstrate the capability to make decisions on the distribution and administration of KI to supplement sheltering and evacuation. This decision must be based on the ORO's plans/procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process must involve close coordination with appropriate assessment and decision-making staff.

Should more than one ORO be involved in decision making, all appropriate OROs must communicate and coordinate PADs with each other. In addition, decisions must be coordinated/communicated with incident command. OROs must demonstrate the capability to communicate the results of decisions to all the affected locations.

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

State of Maryland Negotiated Extent of Play:

All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency. Actual KI will not be transported. KI will be available for inspection at the respective storage location. (Note – this may be demonstrated during the out-of-sequence evaluations)

Locations evaluated: KI Storage Locations:

- Calvert County Health Department
- Dorchester County
- Dorchester County EOC
- Dorchester County Health Department
- St. Mary's County
- St. Mary's County EOC
- SEOC
- State AAC

Outstanding Issues: None

Sub-element 2.c – Precautionary and/or Protective Action Decision Consideration for the Protection of Persons with Disabilities and Access/Functional Needs

Criterion 2.c.1: Precautionary and/or protective action decisions are made, as appropriate, for groups of persons with disabilities and access/functional needs. (NUREG-0654/FEMA-REP-1, D.4; J.9; J.10.d, e)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to determine precautionary and /or protective action decisions, including evacuation, sheltering, and use of KI, when applicable, for groups of persons with disabilities and access/functional needs (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day cares, mobility-impaired individuals, and transportation-dependent individuals). The focus is on those groups of persons with disabilities and access/functional needs that are or potentially will be affected by a radiological release from an NPP.

EXTENT OF PLAY

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a full-scale, functional or tabletop exercise that would include the use of plant conditions transmitted from the licensee. Usually it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for incidents where there is a high-risk environmental condition or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, factors that must be considered include weather conditions, shelter availability, availability of transportation assets, risk of evacuation versus risk from the avoided dose, and precautionary school evacuations. In addition, decisions must be coordinated and communicated with the incident command. In situations where an institutionalized population cannot be evacuated, the ORO must consider use of KI.

Applicable OROs must demonstrate the capability to alert and notify all public school systems/districts of emergency conditions that are expected to or may necessitate protective actions for students. Demonstration requires that the OROs actually contact public school systems/districts during the exercise.

In accordance with plans/procedures, OROs and/or officials of public school systems/districts must demonstrate the capability to make prompt decisions on protective actions for students. The decision-making process, including any preplanned strategies for protective actions for that ECL, must consider the location of students at the time (e.g., whether the students are still at home, en-route to school, or at school).

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

State of Maryland Negotiated Extent of Play:

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. List of any special populations are available for review. School officials responsible for contacting individual facilities are present in the county EOCs. Private schools, private kindergartens and day care centers will not participate in the exercise however; OROs will have lists of any facilities located within the jurisdiction available for review.

Locations evaluated:

- Calvert County
- St. Mary's County
- Dorchester County

Outstanding Issues: None

Sub-element 2.d. – Radiological Assessment and Decision Making for the Ingestion Exposure Pathway

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO's planning criteria. (NUREG-0654/FEMA-REP-1, A.3; C.1, 4; D.4; J.9, 11)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate PAGs, and make timely, appropriate PADs to mitigate exposure from the pathway.

During an incident at an NPP, a release of radioactive material may contaminate water supplies and agricultural products in the surrounding areas. Any such contamination would likely occur during the plume phase of the incident and, depending on the nature of the release, could impact the ingestion pathway for weeks or years.

EXTENT OF PLAY

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a full-scale, functional or tabletop exercise that would include the use of plant conditions transmitted from the licensee.

OROs are expected to take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans/procedures. Often OROs initiate such actions based on criteria related to the facility's ECLs. Such actions may include recommendations to place milk animals on stored feed and use protected water supplies. The ORO must use its procedures to assess the radiological consequences of a release on the food and water supplies, such as the development of a sampling plan. The ORO's assessment must include evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas; characterization of the releases from the facility; and the extent of areas potentially impacted by the release. During this assessment, OROs must consider use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water must then be compared

to the appropriate ingestion PAGs contained in the ORO's plans/procedures. The plans/procedures contain PAGs based on specific dose commitment criteria or on criteria as recommended by current Food and Drug Administration (FDA) guidance. Timely and appropriate recommendations must be provided to the ORO decision-makers group for implementation decisions. OROs may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

The ORO must demonstrate timely decisions to minimize radiological impacts from the ingestion pathway, based on the given assessments and other information. Any such decisions must be communicated and, to the extent practical, coordinated with neighboring OROs.

OROs must use Federal resources, as identified in the Nuclear/Radiological Incident Annex of the NRF and other resources (e.g., compacts or nuclear insurers). Evaluation of this criterion will take into consideration the level of Federal and other participating resources.

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

State of Maryland Negotiated Extent of Play:

This will be demonstrated on day two of the exercise in accordance with MDE plans and procedures.

Locations evaluated:

MDE Ingestion Pathway Coordinating Committee (IPCC) at State AAC

Outstanding Issues: None

Sub-element 2.e. – Radiological Assessment and Decision Making Concerning Post-Plume Phase Relocation, Reentry, and Return

Criterion 2.e.1: Timely post-plume phase relocation, reentry, and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654/FEMA-REP-1, I.10; J.9; K.3.a; M.1)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to make decisions on post-plume phase relocation, reentry, and return of the general public. These decisions are essential for protection of the public from direct long-term exposure to deposited radioactive materials from a severe incident at an NPP.

EXTENT OF PLAY

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a full-scale, functional or tabletop exercise that would include the use of plant conditions transmitted from the licensee.

Relocation: OROs must demonstrate the capability to estimate integrated dose in contaminated areas and compare these estimates with PAGs; apply decision criteria for relocation of those individuals in the general public who have not been evacuated, but where actual or projected doses are in excess of relocation PAGs; and control access to evacuated and restricted areas. OROs will make decisions for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs. Determination of areas to be restricted must be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates versus the PAGs, and analyses of vegetation and soil field samples.

Reentry: Decisions must be made on location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions.

Examples of control procedures are the assignment of, or checking for, direct-reading and permanent record dosimetry for emergency workers; questions regarding an individual's objectives, locations expected to be visited, and associated timeframes; availability of maps and plots of radiation exposure rates; and advice on areas to avoid. Control procedures also include monitoring of individuals, vehicles, and equipment; the implementation of decision criteria regarding decontamination; and proper disposition of emergency worker dosimetry and maintenance of emergency worker radiation exposure records.

Responsible OROs must demonstrate the capability to develop a strategy for authorized reentry of individuals into the restricted zone(s), based on established decision criteria. OROs must demonstrate the capability to modify those policies for security purposes (e.g., police patrols), maintenance of essential services (e.g., fire protection and utilities), and other critical functions. They must demonstrate the capability to use decision-making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage) or retrieve important possessions. Coordinated policies for access and exposure control must be developed among all agencies with roles to perform in the restricted zone(s). OROs must demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to reenter the restricted zone(s). The extent to which OROs need to develop policies on reentry are determined by scenario events.

Return: OROs must demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis). OROs must base decisions on environmental data and political boundaries or physical/ geological features, which allow identification of the boundaries of areas to which

members of the general public may return. Return is permitted to the boundary of the restricted area(s) that is based on the relocation PAG.

Other factors that the ORO must consider in decision-making include conditions that permit cancellation of the ECL and relaxation of associated restrictive measures. OROs must base return recommendations on measurements of radiation from ground deposition. OROs must have the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, schools, and intermediate-term housing for relocated persons.

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

State of Maryland Negotiated Extent of Play:

This will be demonstrated on day two of the exercise in accordance with MDE plans and procedures.

Location evaluated:

MDE IPCC at State AAC

Outstanding Issues: None

Sub-element 3.a – Implementation of Emergency Worker Exposure Control

Criterion 3.a.1: The OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans/procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to emergency workers. (NUREG-0654/FEMA-REP-1, K.3.a, b; K.4)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimetry and permanent record dosimetry; reading of direct-reading dosimetry by emergency workers at appropriate frequencies; maintaining a radiation dose record for each emergency worker; establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of the PAGs, and the capability to provide KI for emergency workers, always applying the "as low as is reasonably achievable" principle as appropriate.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.

OROs must demonstrate the capability to provide emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, dosimeter chargers, KI, and instructions on the use of these items. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows an individual(s) to read the administrative reporting limits that are pre-established at a level low enough to consider subsequent calculation of TEDE and maximum exposure limits, for those emergency workers involved in lifesaving activities, contained in the ORO's plans/procedures.

Each emergency worker must have basic knowledge of radiation exposure limits as specified in the ORO's plans/procedures. When supplemental resources are used, they must be provided with just-in-time training to ensure basic knowledge of radiation exposure control. Emergency workers must demonstrate procedures to monitor and record dosimeter readings and manage radiological exposure control.

During a plume phase exercise, emergency workers must demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker must report accumulated exposures during the exercise as indicated in the plans/procedures. OROs must demonstrate the actions described in the plans/procedures by determining whether to replace the worker, authorize the worker to incur additional exposures, or take other actions. Should exercise play not require emergency workers to seek authorizations for additional exposure, evaluators must interview at least two workers to determine their knowledge of whom to contact in case authorization is needed, and at what exposure levels. Workers may use any available resources (e.g., written procedures and/or coworkers) in providing responses.

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission. In such cases, adequate control of exposure can be achieved for all team members using one direct-reading dosimeter worn by the team leader. Emergency workers assigned to low-exposure rate fixed facilities (e.g., EOCs and communications center within the EPZ, reception centers, and counting laboratories) may have individual direct-reading dosimeters or they may be monitored using group dosimetry (i.e., direct-reading dosimeters strategically placed in the work area). Each team member must still have his or her own permanent record dosimetry. Individuals authorized by the ORO to reenter an evacuated area during the plume (emergency) phase, must be limited to the lowest radiological exposure commensurate with completing their missions.

OROs may have administrative limits lower than EPA-400/R-17/001 dose limits for emergency workers performing various services (e.g., lifesaving, protection of valuable property, all activities). OROs must ensure that the process used to seek authorization for exceeding dose

limits does not negatively impact the capability to respond to an incident where lifesaving and/or protection of valuable property may require an urgent response.

OROs must demonstrate the capability to accomplish distribution of KI to emergency workers consistent with decisions made. OROs must have the capability to develop and maintain lists of emergency workers who have ingested KI, including documentation of the date(s) and time(s) they did so. Ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI shall not be performed. OROs must demonstrate the capability to formulate and disseminate instructions on using KI for those advised to take it. Emergency workers must demonstrate basic knowledge of procedures for using KI whether or not the scenario drives the implementation of KI use. This can be accomplished by an interview with the evaluator.

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

State of Maryland Negotiated Extent of Play:

All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency. Dosimetry electrical leakage checks will be submitted with the ALC. Electronic dosimetry may be substituted for SRD's at some state or local jurisdictions.

Locations evaluated:

- State Field Monitoring Team
- State Field Sampling Team
- Calvert County
- St. Mary's County
- Dorchester County
- Dorchester County (Back Up Route Alerting)
- TCP/ACP (All Risk Counties)

Outstanding Issues: None

Sub-element 3.b – Implementation of KI Decision for Institutionalized Individuals and the General Public

Criterion 3.b.1: KI and appropriate instructions are available if a decision to recommend use of KI is made. Appropriate record-keeping of the administration of KI for institutionalized individuals is maintained (NUREG-0654/FEMA-REP-1, J.10.e, and f)

INTENT

The Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to provide KI for institutionalized individuals, and, when in the plans/procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to institutionalized individuals, providing KI to the general public is an ORO option and must be reflected as such in ORO plans/procedures. Provisions must include the availability of adequate quantities, storage, and means of distributing KI.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.

OROs must demonstrate the capability to make KI available to institutionalized individuals, and, where provided for in their plans/procedures, to members of the general public. OROs must demonstrate the capability to accomplish distribution of KI consistent with decisions made. OROs must have the capability to develop and maintain lists of institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. Ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI shall not be performed. OROs must demonstrate the capability to formulate and disseminate instructions on using KI for those advised to take it.

Should a recommendation be made for the general public to take KI, appropriate information must be provided to the public by the means of notification specified in the ORO's plans/procedures.

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

State of Maryland Negotiated Extent of Play:

All activities are based on the ORO's plans and procedures and completed as they would be in an actual emergency. There are no special facilities within the Dorchester County 10-mile Emergency Planning Zone.

Locations evaluated:

- Calvert County
- Dorchester County
- St. Mary's County

Outstanding Issues: None

Sub-element 3.c – Implementation of Precautionary and/or Protective Actions for Persons with Disabilities and Access/Functional Needs

Criterion 3.c.1: Precautionary and/or protective action decisions are implemented for persons with disabilities and access/functional needs other than schools within areas subject to protective actions. (NUREG-0654/FEMA-REP-1, J.10.c, d, e, g)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement precautionary and/or protective action decisions, including evacuation and/or sheltering, for all persons with disabilities and access/functional needs. The focus is on those persons with disabilities and access/functional needs that are (or potentially will be) affected by a radiological release from an NPP.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, an actual event, or by means of drills conducted at any time.

Applicable OROs must demonstrate the capability to alert and notify (i.e., provide PARs and emergency information and instructions to) persons with disabilities and access/functional needs, including hospitals/medical facilities, nursing homes, correctional facilities, and mobility-impaired and transportation-dependent individuals. OROs must demonstrate the capability to provide for persons with disabilities and access/functional needs in accordance with plans/procedures.

Contact with persons with disabilities and access/functional needs and reception facilities may be real or simulated, as agreed to in the extent of play. Some contacts with transportation providers must be real, as negotiated in the extent of play. All actual and simulated contacts must be logged.

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

State of Maryland Negotiated Extent of Play:

Lists of any special populations are verified at the EOC but not provided to the evaluator. Lists of all special facilities are provided at evaluation. Contact with any special facility will be simulated or discussed at the EOC. Some facilities (~ 10%) may be contacted.

Locations evaluated:

- Calvert County
- Dorchester County
- St. Mary's County

Outstanding Issues: None

Criterion 3.c.2: OROs/School officials implement precautionary and/or protective actions for schools. (NUREG-0654/FEMA-REP-1, J.10.c, d, e, g)

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional, or tabletop exercise, an actual event, or by means of drills conducted at any time.

Public school systems/districts must demonstrate the ability to implement PADs for students. The demonstration must be made as follows: Each school system/district within the 10 mile EPZ must demonstrate implementation of protective actions. At least one school per affected system/district must participate in the demonstration. Canceling the school day, dismissing early, or sheltering in place must be simulated by describing to evaluators the procedures that would be followed. When evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process.

Should the objectives be accomplished through an interview, appropriate school personnel including decision-making officials (e.g., schools' superintendent/principals and transportation director/bus dispatchers), and at least one bus driver (and the bus driver's escort, when applicable) must be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, when required by the plans/procedures, must be verified.

Officials of the school system(s) must demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

The provisions of this criterion also apply to any private schools, private kindergartens, and licensed daycare centers that participate in REP exercises pursuant to the ORO's plans/procedures as negotiated in the Extent-of-Play Agreement.

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

State of Maryland Negotiated Extent of Play:

Calvert and St. Mary's counties will demonstrate protective actions for schools from the respective county EOCs. On September 13, 2017, day two of the exercise, one school administrator will describe the required actions taken in the school building. There are no risk schools in Dorchester County. Protective actions for school children that live inside the 10-mile EPZ but attend school outside the 10-mile EPZ will be demonstrated by actions taken in the EOC during the actual exercise. OROs will have lists of any facilities located within the jurisdiction available for review.

Locations evaluated:

September 12, 2017

- Calvert County EOC
- St Mary's County EOC

September 13, 2017

- Patuxent High School (Calvert)
- Mutual Elementary School (Calvert)
- Green Holly Elementary School (SMC)

Outstanding Issues: None

Sub-element 3.d – Implementation of Traffic and Access Control

Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654/FEMA-REP-1, A.3; C.1, 4; J.10.g, j)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement protective action plans/procedures, including relocation and restriction of access to evacuated/sheltered areas. This Sub-element focuses on selecting, establishing, and staffing of traffic and access control points, and removal of impediments to the flow of evacuation traffic.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, an actual event, or by means of drills conducted at any time.

OROs must demonstrate the capability to select, establish, and staff appropriate traffic and access control points consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation) in a timely manner. OROs must demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled. Traffic and access control staff must demonstrate accurate knowledge of their roles and responsibilities, including verifying emergency worker identification and access authorization to the affected areas, as per the Extent-of-Play Agreement. These capabilities may be demonstrated by actual deployment or by interview, in accordance with the Extent-of-Play Agreement.

In instances where OROs lack authority necessary to control access by certain types of traffic (e.g., rail, water, and air traffic), they must demonstrate the capability to contact the state or Federal agencies that have the needed authority, as agreed upon in the Extent-of-Play Agreement.

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

State of Maryland Negotiated Extent of Play:

Traffic and Access control points will be established administratively in the EOC based on scenario conditions. Access control points will be established near the EOC (parking lot) and not at an actual field location. Communications with the TCP/ACP will occur as they would in an actual emergency. Air and water controls will be coordinated (simulated) from the SEOC. There are no railways in the 10-mile EPZ.

Locations evaluated:

- Calvert County
- St. Mary's County
- Dorchester County
- SEOC (Air / Water)

Outstanding Issues: None

Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654/FEMA-REP-1, J.10.k)

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, an actual event, or by means of drills conducted at any time.

OROs must demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, must be logged. The impediment must occur during the evacuation and be on an evacuation route such that re-routing of traffic is required, triggering decision-making and coordination with the JIC to communicate the alternate route to evacuees leaving the 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 of Maryland Negotiated Extent of Play:

All activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement. Actual equipment will not be dispatched. Should evacuation not be included as one of the protective action then actions to resolve impediments (should an evacuation order be given) will be described to the evaluator including the conduct of a radiological briefing.

Locations evaluated:

Outstanding Issues: None

Sub-element 3.e – Implementation of Ingestion Pathway Decisions

Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk, and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions. NUREG-0654/FEMA-REP-1, A.3; C.1, 4; J.11)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement protective actions, based on criteria recommended by current FDA guidance, for the ingestion exposure pathway EPZ (i.e., the area within an approximate 50-mile radius of the NPP). This Sub-element focuses on those actions required for implementation of protective actions.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, an actual event, or by means of drills conducted at any time.

Applicable OROs must demonstrate the capability to secure and use current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the EPZ. OROs use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex, and other resources (e.g., compacts, nuclear insurers), when available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

State of Maryland/Commonwealth of Virginia and Local Agencies Negotiated Extent of Play:

This will be demonstrated on day three at the table top exercise in accordance with the plans, policies, and procedures or at one of the regional training table top events happening in May or the dress rehearsal in July.

Locations evaluated:

- Annapolis City, MD
- Anne Arundel County
- Arlington County, VA
- Baltimore City
- Baltimore County
- Calvert County
- Caroline County
- Carroll County
- Cecil County
- Charles County
- City of Alexandria, VA
- District of Columbia
- Dorchester County
- Falls Church, VA
- Fairfax County, VA
- Frederick County
- Harford County
- Howard County
- Kent County, MD
- Lancaster County
- Montgomery County
- Prince Georges County
- Queen Anne's County
- Somerset County
- St. Mary's County
- Talbot County
- Washington County
- Wicomico County
- Worcester County

Outstanding Issues: None

Criterion 3.e.2: Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production. (NUREG-0654/FEMA-REP-1, G.1, J.9, 11)

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, an actual event, or by means of drills conducted at any time.

OROs must demonstrate the development of measures and strategies for implementation of ingestion exposure pathway EPZ protective actions by formulating protective action information for the general public and food producers and processors. Demonstration of this criterion includes either pre-distributed public information material in the ingestion exposure pathway EPZ or the capability for rapid reproduction and distribution of appropriate reproduction-ready information and instructions to pre-determined individuals and businesses.

OROs must also demonstrate the capability to control, restrict, or prevent distribution of contaminated food by commercial sectors. Exercise play must include demonstration of communications and coordination among organizations to implement protective actions. Field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the ingestion exposure pathway EPZ must be demonstrated, but actual communications with food producers and processors may be simulated.

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

State of Maryland Negotiated /Commonwealth of Virginia and Local Extent of Play:

This will be demonstrated on day three of the table top exercise in accordance with the plans, policies, and procedures.

Locations evaluated:

- Annapolis City, MD
- Anne Arundel County
- Arlington County, VA
- Baltimore City
- Baltimore County
- Calvert County
- Caroline County
- Carroll County
- Cecil County
- Charles County
- City of Alexandria, VA
- District of Columbia
- Dorchester County
- Falls Church, VA
- Fairfax County, VA

- Frederick County
- Harford County
- Howard County
- Kent County, MD
- Lancaster County
- Montgomery County
- Prince Georges County
- Queen Anne's County
- Somerset County
- St. Mary's County
- Talbot County
- Washington County
- Wicomico County
- Worcester County

Outstanding Issues: None

Sub-element 3.f – Implementation of Post-Plume Phase Relocation, Reentry, and Return Decisions

Criterion 3.f.1: Decisions regarding controlled reentry of emergency workers and relocation and return of the public during the post-plume phase are coordinated with appropriate organizations and implemented. (NUREG-0654/FEMA-REP-1, E.7; J.10.j; J.12; K.5.b; M.1, 3)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement plans, procedures, and decisions for post-plume phase relocation, reentry, and return. Implementation of these decisions is essential for protecting the public from direct long-term exposure to deposited radioactive materials from a severe incident at a commercial NPP.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional, or tabletop exercise, an actual event, or by means of drills conducted at any time.

Relocation: OROs must demonstrate the capability to coordinate and implement decisions concerning relocation of individuals located in radiologically contaminated areas who were not previously evacuated. Such individuals must be relocated to an area(s) where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs must also demonstrate the capability to provide for short- or long-term relocation of evacuees who lived in an area(s) that has residual radiation levels above the (first-, second-, and 50-year) PAGs.

Areas of consideration must include the capability of OROs to communicate with other OROs regarding timing of actions, notification of the population of procedures for relocation, and notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. OROs must also demonstrate the capability to communicate instructions to the public regarding relocation decisions and intermediate-term housing for relocated persons.

Reentry: OROs must demonstrate the capability to control reentry and exit of individuals who are authorized by the ORO to temporarily reenter the restricted area during the post-plume (i.e., intermediate or late) phase to protect them from unnecessary radiation exposure. OROs must also demonstrate the capability to control exit of vehicles and other equipment to control the spread of contamination outside the restricted area(s). Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must reenter an evacuated area during the post-emergency phase must be limited to the lowest radiological exposure commensurate with completing their missions. Monitoring and decontamination facilities will be established as appropriate.

Examples of control procedures are: (1) assignment of, or checking for, direct-reading and permanent record dosimetry for emergency workers; (2) questions regarding the individuals' objective(s), location(s) expected to be visited, and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; (5) procedures for exit, including monitoring of individuals, vehicles, and equipment; (6) decision criteria regarding contamination; (7) proper disposition of emergency worker dosimetry, and (8) maintenance of emergency worker radiation exposure records.

Return: OROs must demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs must demonstrate the capability to identify and prioritize services and facilities that require restoration within a few days, and to identify procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, and schools.

Communication among OROs for relocation, reentry, and return may be simulated. All simulated or actual contacts must be documented. These discussions may be accomplished in a group setting.

OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex, and other resources (e.g., compacts or nuclear insurers), when available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

State of Maryland /Commonwealth of Virginia and Local Negotiated Extent of Play:

This will be demonstrated on Day Three of the table top exercise in accordance with the plans, policies, and procedures.

Locations evaluated:

- Annapolis City, MD
- Anne Arundel County
- Arlington County, VA
- Baltimore City
- Baltimore County
- Calvert County
- Caroline County
- Carroll County
- Cecil County
- Charles County
- City of Alexandria, VA
- District of Columbia
- Dorchester County
- Falls Church, VA
- Fairfax County, VA
- Frederick County
- Harford County
- Howard County
- Kent County, MD
- Lancaster County
- Montgomery County
- Prince Georges County
- Queen Anne's County
- Somerset County
- St. Mary's County
- Talbot County
- Washington County
- Wicomico County
- Worcester County

Outstanding Issues: None

Sub-element 4.a – Plume Phase Field Measurements and Analyses

Criterion 4.a.2: Field teams (2 or more) are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654/FEMA-REP-1, C.1; H.12; I.7, 8, 11; J.10.a)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to deploy FMTs with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate disposition on the ground from an airborne plume. In addition, NUREG-0654/FEMA-REP-1 indicates that OROs must have the capability to use FMTs within the plume exposure pathway EPZ to detect airborne radioiodine in the presence of noble gases and radioactive particulate material in the airborne plume. In an incident at an NPP, the possible release of radioactive material may pose a risk to the nearby population and environment. Although incident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an incident, it is important to collect field radiological data to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional, or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.

Responsible OROs must demonstrate the capability to brief FMTs on predicted plume location and direction, plume travel speed, and exposure control procedures before deployment. During an HAB incident, the Field Team management must keep the incident command informed of field monitoring teams' activities and location. Coordination with FMTs and field monitoring may be demonstrated as out-of-sequence demonstrations, as negotiated in the Extent-of-Play Agreement.

Field measurements are needed to help characterize the release and support the adequacy of implemented protective actions, or to be a factor in modifying protective actions. Teams must be directed to take measurements at such locations and times as necessary to provide sufficient information to characterize the plume and its impacts.

Should the responsibility for obtaining peak measurements in the plume be accepted by licensee field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by ORO monitoring teams. Should the licensee FMTs not obtain peak measurements in the plume, it is the ORO's decision as to whether peak measurements are necessary to sufficiently characterize the plume. The sharing and coordination of plume measurement information among all FMTs (licensee, Federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form(s), to a radiological laboratory (ies) must be demonstrated.

OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts or the licensee). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

State of Maryland Negotiated Extent of Play:

These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. At least six readings will be obtained by each team at a survey point location. In accordance with, (IAW) agreements with Exelon Generation and State and Local organizations, State teams will not measure plume centerline radiation levels. Airborne radioactivity samples will be counted in the field. Chain of custody procedures to deliver samples for additional analysis will be described to the evaluator.

Location evaluated:

State AAC (Baltimore and Prince Frederick)

Outstanding Issues: None

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654/FEMA-REP-1, C.1; H.12: I.8, 9; J.10.a)

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional, or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.

Two or more FMTs must demonstrate the capability to make and report measurements of ambient radiation to the field team coordinator, dose assessment team, or other appropriate authority. FMTs must also demonstrate the capability to obtain an air sample for measurement of airborne radioiodine and particulates, and to provide the appropriate authority with field data pertaining to measurement. Should samples have radioactivity significantly above background, the authority must consider the need for expedited laboratory analyses of these samples.

OROs must share data in a timely manner with all other appropriate OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form(s) for transfer to a laboratory(ies), are in accordance with the ORO's plans/procedures.

OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts or the licensee). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

State of Maryland Negotiated Extent of Play:

These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. Only the State teams will demonstrate this objective.

One sample will be obtained in an area that exhibits above ambient background radiation levels (plume edge) when applicable. Scenario data / location may not result in access to plume dose. Delivery of samples for additional analysis will not be demonstrated. Chain of custody procedures will be described to the evaluator.

Locations evaluated:

(2) State MDE Field Monitoring Teams (plume)

Outstanding Issues: None

Sub-element 4.b – Post-Plume Phase Field Measurements and Sampling

Criterion 4.b.1: The field teams (2 or more) demonstrate the capability to make appropriate measurements and to collect appropriate samples (e.g., food crops, milk, water, vegetation, and soil) to support adequate assessments and protective action decision making. (NUREG-0654/FEMA-REP-1, C.1; I.8; J.11)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to assess the actual or potential magnitude and locations of radiological hazards to determine the ingestion exposure pathway EPZ and to support relocation, reentry, and return decisions. This Sub-element focuses on collecting environmental samples for laboratory analyses that are essential for decisions on protecting the public from contaminated food and water and direct radiation from deposited materials.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional, or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.

The ORO's FMTs must demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to

support reentry, relocation, and return decisions. When resources are available, use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and chain-of-custody form(s) for transfer to a laboratory (ies), are in accordance with the ORO's plans/procedures.

The FMTs and/or other sampling personnel must secure ingestion pathway samples from agricultural products and water. Samples in support of relocation and return must be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition.

OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts, the licensee, or nuclear insurers). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

State of Maryland Negotiated Extent of Play:

This will be demonstrated on September 13, 2017, day two of exercise during the field sample teams drill in accordance with the plans, policies, and procedures. Maryland will conduct four (4) samples in the following areas:

- Soil;
- Water;
- Vegetables; and
- Milk.

Locations evaluated:

AAC (Baltimore)

Outstanding Issues: None

Sub-element 4.c – Laboratory Operations

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654/FEMA-REP-1, C.1, 3; J.11)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision making.

EXENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale, functional, or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency.

The laboratory staff must demonstrate the capability to follow appropriate procedures for receiving samples, including logging information, preventing contamination of the laboratory(ies), preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff must demonstrate the capability to prepare samples for conducting measurements. The laboratory(ies) must be appropriately equipped to provide, upon request, timely analyses of media of sufficient quality and sensitivity to support assessments and decisions anticipated in the ORO's plans/procedures. The laboratory instrument calibrations must be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident must be as described in the plans/procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g., transuranic or as a result of a terrorist incident) or when warranted by incident circumstances. Analysis may require resources beyond those of the ORO.

The laboratory staff must be qualified in radio-analytical techniques and contamination control procedures.

OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts, the licensee, or nuclear insurers). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

State of Maryland Negotiated Extent of Play:

The state has acquired the services of a contracted laboratory; a demonstration will be completed at another date and time which has been agreed upon by FEMA.

Location evaluated:

GEL Labs (Charleston, SC)

Outstanding Issues:

Sub-element 5.a – Activation of the Prompt Alert and Notification System

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the

public must include as a minimum the elements required by current REP guidance. (NUREG-0654/FEMA-REP-1, E.5, 6, 7)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to provide prompt instructions to the public within the plume exposure pathway EPZ.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, drills, or operational testing of equipment that would fully demonstrate capability.

Responsible OROs must demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume EPZ. Following the decision to activate the alert and notification system, OROs must complete system activation for primary alert/notification and disseminate the information/instructions in a timely manner. For exercise purposes, timely is defined as —with a sense of urgency and without undue delay. Should message dissemination be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Procedures to broadcast the message must be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test message(s) is not required. The procedures must be demonstrated up to the point of actual activation. The alert signal activation should be simulated, not performed. Evaluations of Emergency Alert System (EAS) broadcast stations may also be accomplished through Site Assistance Visits.

The capability of the primary notification system to broadcast an instructional message on a 24-hour basis must be verified during an interview with appropriate personnel from the primary notification system, including verification of provisions for backup power or an alternate station.

The initial message must include at a minimum the following elements: alert signal and instructional message; -specific emergency information (e.g., brochures, calendars, and/or information in telephone books) for use by the general public during an emergency; and tuned for additional information, or that the population tune to another station for additional information.

Should route alerting be demonstrated as a primary method of alert and notification, it must be done in accordance with the ORO's plans/procedures and the Extent-of-Play Agreement. OROs must demonstrate the capability to accomplish the primary route alerting in a timely manner (not subject to specific time requirements). At least one route needs to be demonstrated and evaluated. The selected route(s) must vary from exercise to exercise. However, the most difficult

route(s) must be demonstrated no less than once every 8 years. All alert and notification activities along the route(s) must be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as negotiated in the extent of play. Actual testing of the mobile public address system will be conducted at an agreed-upon location.

OROs may demonstrate any means of primary alert and notification included in their plans/procedures as negotiated in the Extent-of-Play Agreement.

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

State of Maryland Negotiated Extent of Play:

These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. Contact with one EAS station will be demonstrated. Actual siren sounding and EAS demonstration will be simulated.

-Note-

> MEMA will initiate EAS messaging for the respective local jurisdictions and will describe the process of using EMnet to the evaluator, however, the MJOC will draft a hard copy of the message which will be faxed directly to the EAS station (Star 98.3). Calvert and St. Mary's County coordinate activation with the same EAS station. One county (Calvert) will make contact with the EAS station with a message for both counties. The County may activate EAS as a back-up should conditions warrant. The method receipt will be verified by a FEMA evaluator however, the actual message will not be broadcasted.

Locations evaluated:

- SEOC
- Calvert County
- St. Mary's County
- Dorchester County
- Star 98.3 Radio Station

Outstanding Issues: None

Criterion 5.a.3: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654/FEMA-REP-1, E.6)

EXTENT OF PLAY

Offsite Response Organizations (ORO) with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5–10 miles from the nuclear power plant

should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.

For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed-upon location.

Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting only needs to be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, should the exercise scenario call for failure of any portion of the primary system(s), or should any portion of the primary system(s) actually fail to function. Only one route needs to be selected and demonstrated, when applicable. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed-upon location.

All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

State of Maryland Negotiated Extent of Play:

These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. Siren activation (simulated) is coordinated so that one county activates sirens for the other two risk jurisdictions.

Calvert County/ St Mary's County

Back up alerting for Calvert and St. Mary's Counties will be initiated using an electronic notification technology. Alerting will be demonstrated to a specific evaluation group following a siren failure identified by scenario inject. Alerting of the evaluation group should be accomplished in a reasonable amount of time with a recommended goal of 45minutes. FEMA will provide a list for the evaluation group with Name, Cell Number, email address, Text (cell phone provider) to and verify that the alerting message was received.

Dorchester County

The designated route alerting player will be located at the staging area. Timing of the back-up route should only begin after the designated participant receives notification of the failed siren from the County EOC. One back-up route alerting route will be demonstrated in Dorchester County.

Locations evaluated:

- Calvert County
- St. Mary's County
- Dorchester County
- Dorchester County (Back Up Route Alerting)

Outstanding Issues: None

Sub-element 5.b – Subsequent Emergency Information and Instructions for the Public and the Media

Criterion 5.b.1: OROs provide accurate subsequent emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654/FEMA-REP-1, E.5, 7; G.3.a, G.4.a, c)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to disseminate appropriate emergency information and instructions, including any recommended protective actions, to the public. In addition, NUREG-0654/FEMA-REP-1 requires OROs to ensure that the capability exists for providing information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG-0654/FEMA-REP-1 also provides that a system must be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, or drills.

The responsible ORO personnel/representatives must demonstrate actions to provide emergency information and instructions to the public and media in a timely manner following the initial alert and notification (not subject to specific time requirements). For exercise purposes, timely is defined as —with a sense of urgency and without undue delay. Should message dissemination be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Message elements: The ORO must ensure that emergency information and instructions are consistent with PADs made by appropriate officials. The emergency information must contain all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, shelter-in-place instructions, information concerning protective actions for schools and persons with disabilities and access/functional needs, and public inquiry hotline telephone number) to assist the public in carrying out the PADs provided. The ORO must also be prepared to disclose and explain the ECL of the incident. At a minimum, this information must be included in media briefings and/or media releases. OROs must demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion exposure pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information must be all-inclusive by including the four items specified under exercise Demonstration Criterion 5.a.1 and previously identified protective action areas that are still valid, as well as new areas. The OROs must demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs must demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plans/procedures. OROs must demonstrate the capability to develop emergency information in a non-English language when required by the plans/procedures.

Should ingestion pathway measures be exercised, OROs must demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plans/procedures.

Media information: OROs must demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute media releases as the incident warrants. The OROs must demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and releases must be consistent with PADs and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and media releases) and media information kits must be available for dissemination to the media.

Public inquiry: OROs must demonstrate that an effective system is in place for dealing with calls received via the public inquiry hotline. Hotline staff must demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the hotline staff, including information that corrects false or inaccurate information when trends are noted, must be included, as appropriate, in emergency information provided to the public, media briefings, and/or media releases.

HAB considerations: The dissemination of information dealing with specific aspects of NPP security capabilities, actual or perceived adversarial (terrorist) force or threat, and tactical law

enforcement response must be coordinated and communicated with appropriate security authorities, e.g., law enforcement and NPP security agencies, in accordance with ORO plans/procedures.

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

State of Maryland Negotiated Extent of Play:

These activities will be based on the ORO's plans and procedures and completed, as they would be in an actual emergency. One media briefing will be conducted by the SEOC Lead PIO on Day 3. Public inquiry calls will be initiated at a Site Area Emergency classification. Each location will receive at least six calls. Special News Broadcasts will be developed at appropriate centers but actual broadcast of these messages will not take place.

Locations evaluated:

Public Inquiry Control: This will be demonstrated on Day One (1) of the exercise for the State and risk jurisdictions.

- SEOC
- Calvert County
- St. Mary's County
- Dorchester County

Media Briefings: One Media Briefing will be given on Day Three (3) by the SEOC Lead PIO on behalf of the ingestion counties.

- Annapolis City, MD
- Anne Arundel County
- Arlington County, VA
- Baltimore City
- Baltimore County
- Calvert County
- Caroline County
- Carroll County
- Cecil County
- Charles County
- City of Alexandria, VA
- District of Columbia
- Dorchester County
- Falls Church, VA
- Fairfax County, VA

- Frederick County
- Harford County
- Howard County
- Kent County, MD
- Lancaster County
- Montgomery County
- Prince Georges County
- Queen Anne's County
- Somerset County
- St. Mary's County
- Talbot County
- Washington County
- Wicomico County
- Worcester County

Outstanding Issues: None

Sub-element 6.a – Monitoring, Decontamination, and Registration of Evacuees

Criterion 6.a.1: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees. (NUREG-0654/FEMA-REP-1, A.3; C.4; J.10.h; J.12)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement radiological monitoring and decontamination of evacuees, while minimizing contamination of the facility. OROs must also have the capability to identify and register evacuees at reception centers.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, drills, or SAV.

Radiological monitoring, decontamination, and registration facilities for evacuees must be set up and demonstrated as they would be in an actual emergency or as indicated in the Extent-of-Play Agreement. OROs conducting this demonstration must have one-third of the resources (e.g., monitoring teams/instrumentation/portal monitors) available at the facility (ies) as necessary to monitor 20 percent of the population within a 12-hour period. This would include adequate space for evacuees 'vehicles. Availability of resources can be demonstrated with valid documentation (e.g., MOU/LOA, etc.) reflecting how necessary equipment would be procured for the location. Plans/procedures must indicate provisions for service animals.

Before using monitoring instrument(s), the monitor(s) must demonstrate the process of checking the instrument(s) for proper operation. Staff responsible for the radiological monitoring of evacuees must demonstrate the capability to attain and sustain, within about 12 hours, a monitoring productivity rate per hour needed to monitor the 20 percent EPZ population planning base. The monitoring productivity rate per hour is the number of evacuees that can be monitored, per hour, by the total complement of monitors using an appropriate procedure. For demonstration of monitoring, decontamination, and registration capabilities, a minimum of six evacuees must be monitored per station using equipment and procedures specified in the plans/procedures. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators to determine whether the 12-hour requirement can be met.

OROs must demonstrate the capability to register evacuees upon completion of the monitoring and decontamination activities. The activities for recording radiological monitoring and, when necessary, decontamination must include establishing a registration record consisting of the evacuee's name, address, results of monitoring, and time of decontamination, or as otherwise designated in the plan and/or procedures. Audio recorders, camcorders, or written records are all acceptable means for registration.

Monitoring activities shall not be simulated. Monitoring personnel must explain use of trigger/action levels for determining the need for decontamination. They must also explain the procedures for referring any evacuees who cannot be adequately decontaminated for assessment and follow-up in accordance with the ORO's plans/procedures. Contamination of the evacuee(s) will be determined by controller inject and not simulated with any low-level radiation source. 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.

Decontamination of evacuees may be simulated and conducted by interview. Provisions for separate showering and same-sex monitoring must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas. Provisions must also exist to separate contaminated and uncontaminated evacuees, provide changes of clothing for those with contaminated clothing; and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any evacuee found to be contaminated, procedures must be discussed concerning handling of potential contamination of vehicles and personal belongings. Waste water from decontamination operations does not need to be collected.

Individuals who have completed monitoring (and decontamination, when needed) must have means (e.g., hand stamp, sticker, bracelet, form, etc.) indicating that they, and their service animals and vehicles, where applicable, have been monitored, cleared, and found to have no contamination or contamination below the trigger/action level.

In accordance with plans/procedures, individuals found to be clean after monitoring do not need to have their vehicle monitored. These individuals do not require confirmation that their vehicle is free from contamination prior to entering the congregate care areas.

However, those individuals who are found to be contaminated and are then decontaminated will have their vehicles monitored and decontaminated (when applicable) and do require confirmation that their vehicle is free from contamination prior to entering the congregate care areas.

State of Maryland Negotiated Extent of Play:

This element will be evaluated as an out-of-sequence activity

These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. At least 6 evacuees will be monitored with one simulated contaminated. One vehicle will be monitored. Estimated monitoring rates and teams required for demonstration are listed below. The number of teams is based on 10% of the population arriving at the reception center with some contamination.

- Portal monitors can process (4 persons/min) 240 persons/hour
- Hand-held monitors process 12 persons/hour Dorchester County Total Population Est. 300
- Est. @ Reception
- 20 Time to monitor population (no contaminations) using 1 portal monitor >10 minutes
- Time to monitor population (10% contaminations) using hand-held instruments
- 30 minutes / team Teams required for hand-held monitoring in 24 hours
- Teams required for exercise demonstration (1/3)

Locations evaluated:

- Dorchester County – Dorchester Career and Technology Center (co-located with emergency worker)
- Facilities will be staffed and set up and operational prior to the evaluation.

Outstanding Issues:

Refer to Appendix B.

Sub-element 6.b – Monitoring and Decontamination of Emergency Workers and their Equipment and Vehicles

Criterion 6.b.1: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment vehicles. (NUREG-0654/FEMA-REP-1, K.5.a, b)

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to implement radiological monitoring and decontamination of emergency workers and their equipment, inclusive of vehicles.

EXTENT OF PLAY

Assessment of this Demonstration Criterion may be accomplished during a full-scale or functional exercise, drills, or SAV.

The monitoring staff must demonstrate the capability to monitor emergency worker personnel and their equipment and vehicles for contamination in accordance with the ORO's plans/procedures.

Specific attention must be given to equipment, including any vehicles that were in contact with contamination. The monitoring staff must demonstrate the capability to make decisions on the need for decontamination of personnel, equipment, and vehicles based on trigger/action levels and procedures stated in the ORO plans/procedures. Monitoring of emergency workers does not have to meet the 12-hour requirement. However, appropriate monitoring procedures must be demonstrated for a minimum of two emergency workers and their equipment and vehicles. Before using monitoring instrument(s), the monitor(s) must demonstrate the process of checking the instrument(s) for proper operation.

The area to be used for monitoring and decontamination must be set up as it would be in an actual emergency, with all route markings, instrumentation, record keeping, and contamination control measures in place. Monitoring procedures must be demonstrated for a minimum of one vehicle. It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as radiator grills, bumpers, wheel wells, tires, and door handles must be demonstrated. Interior surfaces of vehicles that were in contact with contaminated individuals must also be checked.

Decontamination of emergency workers may be simulated and conducted via interview. Provisions for separate showering and same-sex monitoring must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas. Provisions must also exist to separate contaminated and uncontaminated individuals where applicable; provide changes of clothing for those with contaminated clothing; and store contaminated clothing and personal belongings to prevent further contamination of emergency workers or facilities.

Monitoring activities shall not be simulated. Monitoring personnel must explain use of trigger/action levels for determining the need for decontamination. They must also explain the procedures for referring any emergency workers who cannot be adequately decontaminated for assessment and follow-up in accordance with the ORO's plans/procedures. Contamination of the

individual(s) will be determined by controller inject and not simulated with any low-level radiation source.

Decontamination capabilities and provisions for vehicles and equipment that cannot be successfully decontaminated may be simulated and conducted by interview. Waste water from decontamination operations does not need to be collected.

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

State of Maryland Negotiated Extent of Play:

This element will be evaluated as an out-of-sequence activity

These activities are based on the ORO's plans and procedures and completed, as they would be in an actual emergency. Facilities will be staffed set up and operational prior to the evaluation.

Location evaluated:

Dorchester County – Dorchester Career and Technology Center (co-located with evacuees)