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FEMA

JUN 29 2012

NRC Headquarters' Document Control Desk
Nuclear Regulatory Commission
Washington, D.C. 20555-0001

To Whom It May Concern:

Enclosed is the After Action Report/Improvement Plan for the March 27, 2012, Peach Bottom Atomic Power Station Radiological Emergency Preparedness Exercise.

No deficiencies were identified during the exercise. Five (5) Areas Requiring Corrective Action (ARCAs) were identified and successfully re-demonstrated. Five (5) planning issues were identified with four (4) remaining open.

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 and there is reasonable assurance they can be implemented, as demonstrated during this exercise.

If you have any further questions, please contact me or the Peach Bottom Atomic Power Station Project Officer, Michael E. Shuler, Sr., at (215) 931-5526.

Sincerely,

MaryAnn Tierney
Regional Administrator

Enclosure

IX49
NRR

Peach Bottom Atomic Power Station

After Action Report/ Improvement Plan

Exercise Date - March 27, 2012

Radiological Emergency Preparedness (REP) Program

FEMA

Published June 29, 2012

Peach Bottom Atomic Power Station
After Action Report/Improvement Plan

Published June 29, 2012

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EXECUTIVE SUMMARY

On March 27, 2012, a full-scale plume exercise was demonstrated and evaluated for the 10 Mile Emergency Planning Zone (EPZ) exposure pathway around the Peach Bottom Atomic Power Station (PBAPS) by the Federal Emergency Management Agency (FEMA), Region III. Out-of-Sequence demonstrations were successfully conducted on February 23, and March 1, 2012. The purpose of the Exercise and Out-of-Sequence demonstrations was to assess the capabilities of State, county, 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 PBAPS.

The findings in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA, Region III Radiological 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 most recent full-scale exercise at this site was evaluated on June 26, 2010.

There were no Deficiencies, five (5) Areas Requiring Corrective Action (ARCA) and five (5) planning issues identified as a result of this exercise. All 5 ARCAs were successfully re-demonstrated during the exercise or during remedial re-demonstrations held on March 27, 2012. There were five (5) new Planning Issues. One Planning Issue was resolved prior to the release of this report and (4) remain open.

FEMA wishes to acknowledge the efforts of many individuals in the State of Maryland, Commonwealth of Pennsylvania and their risk counties (Harford, Cecil, Chester, Lancaster, and York) that were evaluated at 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 the exercise.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Peach Bottom Atomic Power Station

Type of Exercise
Plume

Exercise Date
March 27, 2012

Program
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type
Radiological Emergency

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

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

State Jurisdictions

Maryland Emergency Mangement Agency

Maryland State Highway Administration
Maryland State Police
Maryland Natural Resources Police
Maryland Technology Assistance Program
Maryland Department of Transportation
Maryland Department of General Services
Maryland Department of the Environment
Maryland Joint Operations Center
Maryland Department of Agriculture
Maryland Institute for Emergency Services Systems
Maryland Department of Health and Mental Services
Maryland Department of Information Technologies
Maryland Department of Human Resources
Maryland Public Service Commission
Pennsylvania Emergency Management Agency
Pennsylvania Department of Environmental Protection
Pennsylvania Department of Environmental Protection/ Bureau of Radiation Protection
Pennsylvania State Police
Pennsylvania Department of Agriculture
Pennsylvania Public Utilities Commission
Pennsylvania Department of Health
Pennsylvania Department of Education
Pennsylvania Turnpike Commission
Pennsylvania National Guard
Pennsylvania Department of Public Welfare
Pennsylvania Department of Military and Veteran Affairs
Pennsylvania Fish and Boat Commission
Pennsylvania Department of Corrections

Risk Jurisdictions

Cecil County Emergency Opertions Center
Cecil County Public Schools
Cecil County Health Department
Cecil County Department of Emergency Services

Cecil County Department of Social services
Cecil County Sheriff's Office
Cecil County Soil Conservation District
Harford County Emergency Operations Center
Harford County Public Schools
Harford County Public School Transportation Department
Harford County Department of Human Services
Harford County Health Department
Harford County Department of Community Services
Harford County Fire and Emergency Medical Services
Harford County Department of Agriculture
Harford County Department of Inspections, Licenses, and Permits
Harford County Department of Public Works
Harford County Department of Highways
Harford County Department of Water and Sewer
Harford County Department of Administration
Harford County Public Information Office
Harford County Office on Mental Health/ Core Services Agency
Harford County Sheriff's Office
Harford County Bel Air Police Department
Harford County Havre de Grace Police Department
Harford County Aberdeen Police Department
Baltimore city Emergency Management Agency
Chester County Department of Emergency Services
Chester County Department of Health
Chester County Sheriff's Office
Lancaster County Emergency Management Agency
Lancaster County Geographic Information Systems
Lancaster County Commissioner's Office
Lancaster County Sheriff's Office
Lancaster County Penn State Cooperative Extension
Lancaster County Police Department
Lancaster County Manheim Township Fire & Rescue
Lancaster County Drumore Township Emergency Operations Center

Lancaster County Rawlinsville Volunteer Fire Company
York County Commissioners
York County Office of Emergency Mangment
York County 911
York County Department of Emergency Services
York County Sheriff's Office
York County Public Informations Officer
York County Parks
York County Fawn Grove Borough/ Fawn Township Emergency Operations Center
York County Fawn Grove Citizens Volunteer Fire Department
York County Hazmat Team
York County Broque Ambulance Company
York County New Bridgeville Memorial Fire Company
York County Red Lion Volunteer Fire Department
York County Penn State Cooperative Extension
York County Red Lion School district
York County Eastern School District

Private Organizations
Radio Amateur Civil Emergency Services
Exelon Nuclear
American Red Cross
University of Maryland Cooperative Extension
Delmarva Power
Upper Chesapeake Health
Baltimore Gas & Electric
The Aegis Newspaper

Federal Jurisdictions
U.S. Department of Agriculture/ Farm Services
National Weather Service
National Oceanic Atmospheric Administration
U.S. Department of Agriculture/ Natural Resources and Conservation Services
Nuclear Regulatory Commission
Federal Emergency Management Agency

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:

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;

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;

Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993; and

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 Radiological Assistance Committee (RAC).

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

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

NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980; FEMA Guidance Memoranda MS-1, "Medical Services," November 1986; FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991; 66 FR 47546, "FEMA Radiological Emergency Preparedness: Alert and Notification," September 12, 2001; and 67 FR 20580, "FEMA Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002.

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

Section 2 is titled "Exercise Design Summary", and includes the "Purpose and Design", "Exercise Objectives, Capabilities, and Activities", and the "Scenario Summary".

Section 3 of this report, entitled "Analysis of Capabilities", presents detailed information on the demonstration of applicable exercise evaluation areas at each jurisdiction or functional entity evaluated in a jurisdiction-based, issue-only format.

Section 4, "Conclusion", is a description of the Region's overall assessment of the capabilities of the participating organizations. It also presents information on planning issues (both new planning issues identified during this exercise and resolved planning issues identified during previous exercises).

This section also contains:

(1) Descriptions of all Deficiencies, Areas Requiring Corrective Action (ARCAs,) and Planning Issues assessed during this exercise, including recommended corrective actions and the State and local governments' schedule of corrective actions for each identified exercise issue;

(2) Descriptions of ARCAs and Planning Issues assessed during previous exercises and resolved at this exercise, including the corrective action demonstrated, as well as ARCAs or Planning Issues assessed during previous exercises and scheduled for demonstration at this exercise which remain unresolved.

Appendix A - Improvement Plan. A description of Areas Requiring Corrective Action and Planning Issues, the parties responsible for implementing a corrective action and time frame for completion.

Appendix B - Exercise Time Line. A table that depicts the times that events and notifications were noted at participating agencies and locations.

Appendix C - Exercise Evaluators and Team Leaders. A table listing the names, organizations, and evaluation responsibilities of the evaluators and management.

Appendix D - Acronyms and Abbreviations. An alphabetized table defining the acronyms and abbreviations used in this report.

Appendix E - Exercise Plan. A narrative description of information developed to implement the exercise including the Extent of Play Agreement with a detailed description of the exercise criteria and the participants' expected responses to the exercise scenario.

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

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

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

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

town of Delta, leads to the decommissioned Unit 1 area and Information Center; the other passes north of Delta and enters the plant area near Units 2 and 3. There are approximately 57,645 people in the 10-mile EPZ for PBAPS.

2.2 Exercise Objectives, Capabilities and Activities

The objective of the PBAPS 2012 Plume Exercise 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 10 mile Emergency Planning Zone (EPZ).

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

An essential capability of the Radiological Emergency Preparedness Program (REPP) is to evacuate, monitor and decontaminate if necessary, and provide temporary care and shelter to displaced residents from the EPZ. The ability of the support counties to mobilize personnel and resources to establish reception, monitoring and decontamination, and mass care centers was demonstrated.

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

2.3 Scenario Summary

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

The scenario initial conditions have Units 2 and 3 at 100% power with normal operating temperature and pressure. Unit 2 has been on line for 234 days and Unit 3 has been on line for 127 days. The scenario creates conditions for an off-site release through the failure of all three fission product barriers. The sequence of events is initiated at 1610 with a large earthquake (>0.05 g). Control Rod Drive (CRD) pump 2A trips. Reactor Core Isolation Cooling (RCIC) steam isolation valve MO-2-13-015 experiences a loss of power with valve open. Residual Heat Removal (RHR) 2A breaker trips.

By 1624, an ALERT Emergency Classification Level (ECL) is declared due to "HA4 Natural and destructive Phenomena Affecting the Plant Vital Area."

At 1720, an aftershock causes the loss of 1 Bus breaker. 2A Recirculation Pump trips with an indication of degraded seals causing Drywell pressure to increase due to a small leak. This is the failure of Barrier #1 of the Reactor Coolant System (RCS). Failure to SCRAM (Safety Control Rod Ax Man) occurs (reactor power at 55%) due to hydraulic issues. Standby Liquid Control System was successfully activated.

At 1725, there is a loss of nitrogen supply to the Main Steam Isolation Valves (MSIVs). MSIVs remain open, but close in approximately 40 minutes.

By 1735, a SITE AREA EMERGENCY (SAE) is declared due to "Automatic SCRAM not successful as indicated by reactor power greater than 4% and manual scram actions were not successful."

At 1800, the inboard MSIV is closed, however, at 1810, containment radiation levels increase from 1 R/hr to 850 R/hr over a 30 minute period. An increase in radiation levels in the Reactor Building is due to increased radiation levels in containment. The reactor will be successfully shutdown at 1800.

By 1900, chemistry samples are >300 micro Curies/gram (?Ci/g), indicating a loss of fuel cladding barrier. This was the failure of barrier #2 (Fuel Clad). This constitutes a concurrent SAE, "Loss of Clad Barrier (>300 ?Ci/g) and Loss of Reactor Coolant Barrier (>100 R/hr in drywell)."

At 1930, a steam leak in the RCIC room is indicated by increasing radiation levels, room temperature, and fire alarm activation. RCIC isolation valves MO-2-13-15 and MO-2-13-16 failed to close. Valve MO-2-13-15 failed earlier at 1610 at the time of the initial earthquake. There is failure of barrier #3 (Containment). A release to the environment commences at 1930. Emergency response crew performs an emergency reactor blowdown. An Emergency blowdown is a loss of the reactor coolant system barrier. The RCS barrier was previously exceeded with recirculation pump 2A seal leak in the drywell.

By 1945, a General Emergency (GE) is declared based upon a Loss of Fuel Clad Barrier (>300 ?Ci/g), Loss of Reactor Coolant Barrier (>100 R/hr in the drywell), and Loss of Primary Containment Barrier. The initial Protective Action Recommendation (PAR) from the licensee should be evacuation 5 miles 360 degrees, 10 miles downwind (S/SSW/SW/WSW), Potassium Iodide (KI) in the affected areas in accordance with State policies, and the remainder of the 10-mile Emergency Planning Zone (EPZ) population to monitor the Emergency Alert System (EAS).

The Containment radiation readings will continue to increase from 850 R/hr to >995 R/hr over a 60 minute period. The simulated radiological release characteristics are consistent with a clad failure event and a ground-level, filtered release pathway to the environment. The exercise will be terminated at 2130.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

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

(M) Met (No Deficiency or Area Requiring Corrective Action (ARCA) assessed and no unresolved ARCAs from this or prior exercises)

(A) ARCA(s)

(P) Planning Issues

(N) Not Demonstrated

3.2 Summary Results of Exercise Evaluation

Contained in this section are the results and findings of the evaluation of all jurisdictions and locations that participated in the February 23, 2012, March 1, 2012 out of sequence evaluations and the March 26 - 30, 2011, biennial Radiological Emergency Preparedness (REP) exercise. The exercise was held to test the offsite emergency response capabilities of local governments in the 10-mile Emergency Planning Zone (EPZ) surrounding the Peach Bottom Atomic Power Station (PBAPS).

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 and the Extent of Play agreement used in this exercise are found in Appendix E of this report.

All activities were based on the plans and procedures and completed as they would have been in an actual emergency except as noted in the Extent of Play agreement.

Table 3.1 - Summary of Exercise Evaluation (6 pages)

DATE: 2012-03-27 SITE: Peach Bottom Atomic Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		PA EOC	PA JIC	PAAACSEOCBRP	BRP Ctsvl ExEOF	EJIC	PA TACP SPBY	CC EOC	CC EWMDS PGMS	LaCoEOC	LaCoEWMDSLSSC	LaCoRC LCCTC
Emergency Operations Management												
Mobilization	1a1	N		M				N		M		
Facilities	1b1											
Direction and Control	1c1	M		M	M			N		M		
Communications Equipment	1d1	M	M	M	M	M	M	N		M		
Equipment and Supplies to Support Operations	1e1	M	M	M	M	M	M	N	M	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1	M		M				N		M		
Dose Assessment & PARs & PADs for the Emergency Event	2b1			M								
Dose Assessment & PARs & PADs for the Emergency Event	2b2	M										
PADs for disabilities & access/functional needs people	2c1	M						N		M		
Radiological Assessment & Decision-making for Ingestion Pathway	2d1											
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1											
Protective Action Implementation												
Implementation of Emergency Worker Exposure Control	3a1						M	N	M	M	M	M
Implementation of KI PAD for Institutionalized Individuals/Public	3b1						M	N		M		
Implementation of PADs for disabilities & access/functional needs people	3c1							N		M		
Implementation of PADs for Schools	3c2							N		M		
Implementation of Traffic & Access Control	3d1	M					M	N		M		
Impediments to Evacuation	3d2	M					M	N		M		
Availability & use of Commodity & Resource Information	3e1											
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2											
Implementation of Relocation/Reentry/Return Decisions	3f1											
Field Measurement and Analysis												
RESERVED	4a1											
Plume Phase Field Measurement & Analyses	4a2											
Plume Phase Field Measurement & Analyses	4a3											
Post Plume Phase Field Measurements & Sampling	4b1											
Laboratory Operations	4c1											
Emergency Notification and Public Info												
Activation of the Prompt Alert & Notification System	5a1	M						N		M		
RESERVED	5a2											
Activation of the Back-up ANS	5a3							N		M		
Activation of the Exception Area ANS	5a4											
Emergency Information & Instructions for the Public/Media	5b1		M			M		N		M		
Support Operations/Facilities												
Monitoring, Decontamination, & Registration of Evacuees	6a1								M		M	M
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1								M		M	
Temporary Care of Evacuees	6c1											
Transportation/Treatment of Contaminated Injured Individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 2/6)

DATE: 2012-03-27 SITE: Peach Bottom Atomic Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		LaCoMDCPMHS	LaCoMCCPMHS	LaCoMCCFMCol	LaCoMCCGSSC	LaCoMCCMnrMS	LaCoDrmrTwpEOC	LaCoDrmrTwpBuRA	LaCoQvllBrEOC	YCEOC	YCEWMDBAC	YCrCRLHS
Emergency Operations Management												
Mobilization	1a1						M		M	M		
Facilities	1b1			M	M	M						
Direction and Control	1c1						M		M	M		
Communications Equipment	1d1						M	M	M	M		
Equipment and Supplies to Support Operations	1e1	M	M				M	M	M	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1									M		
Dose Assessment & PARs & PADs for the Emergency Event	2b1											
Dose Assessment & PARs & PADs for the Emergency Event	2b2											
PADs for disabilities & access/functional needs people	2c1									M		
Radiological Assessment & Decision-making for Ingestion Pathway	2d1											
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1											
Protective Action Implementation												
Implementation of Emergency Worker Exposure Control	3a1	M					M	M	M	M	M	M
Implementation of KI PAD for Institutionalized Individuals/Public	3b1						M	M	M	M		
Implementation of PADs for disabilities & access/functional needs people	3c1						M		M	M		
Implementation of PADs for Schools	3c2									M		
Implementation of Traffic & Access Control	3d1						M		M	M		
Impediments to Evacuation	3d2						M		M	M		
Availability & use of Commodity & Resource Information	3e1											
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2											
Implementation of Relocation/Reentry/Return Decisions	3f1											
Field Measurement and Analysis												
RESERVED	4a1											
Plume Phase Field Measurement & Analyses	4a2											
Plume Phase Field Measurement & Analyses	4a3											
Post Plume Phase Field Measurements & Sampling	4b1											
Laboratory Operations	4c1											
Emergency Notification and Public Info												
Activation of the Prompt Alert & Notification System	5a1									M		
RESERVED	5a2											
Activation of the Back-up ANS	5a3							M		M		
Activation of the Exception Area ANS	5a4											
Emergency Information & Instructions for the Public/Media	5b1									M		
Support Operations/Facilities												
Monitoring, Decontamination, & Registration of Evacuees	6a1	M	M								M	
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1										M	
Temporary Care of Evacuees	6c1		M									
Transportation/Treatment of Contaminated Injured Individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 3/6)

DATE: 2012-03-27 SITE: Peach Bottom Atomic Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		YCMDCRLHS	YCMCCRLHS	YCMCCRLFC	YCMCCDtSC	YCMCCSWSC	YCMCCSGSC	YCMCCSGMS	YCMCCYC4H	YCFGB/FTEOC	YCFGB/FTBuRA	CC OASD
Emergency Operations Management												
Mobilization	1a1									M		
Facilities	1b1			M	M	M	M	M	M			
Direction and Control	1c1									M		
Communications Equipment	1d1									M	M	
Equipment and Supplies to Support Operations	1e1	M	M							M	M	
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											
Dose Assessment & PARs & PADs for the Emergency Event	2b1											
Dose Assessment & PARs & PADs for the Emergency Event	2b2											
PADs for disabilities & access/functional needs people	2c1											
Radiological Assessment & Decision-making for Ingestion Pathway	2d1											
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1											
Protective Action Implementation												
Implementation of Emergency Worker Exposure Control	3a1	M								M	M	
Implementation of KI PAD for Institutionalized Individuals/Public	3b1									M	M	
Implementation of PADs for disabilities & access/functional needs people	3c1									M		
Implementation of PADs for Schools	3c2											M
Implementation of Traffic & Access Control	3d1									M		
Impediments to Evacuation	3d2									M		
Availability & use of Commodity & Resource Information	3e1											
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2											
Implementation of Relocation/Reentry/Return Decisions	3f1											
Field Measurement and Analysis												
RESERVED	4a1											
Plume Phase Field Measurement & Analyses	4a2											
Plume Phase Field Measurement & Analyses	4a3											
Post Plume Phase Field Measurements & Sampling	4b1											
Laboratory Operations	4c1											
Emergency Notification and Public Info												
Activation of the Prompt Alert & Notification System	5a1											
RESERVED	5a2											
Activation of the Back-up ANS	5a3										M	
Activation of the Exception Area ANS	5a4											
Emergency Information & Instructions for the Public/Media	5b1											
Support Operations/Facilities												
Monitoring, Decontamination, & Registration of Evacuees	6a1	M	M									
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1											
Temporary Care of Evacuees	6c1		M									
Transportation/Treatment of Contaminated Injured Individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 4/6)

DATE: 2012-03-27 SITE: Peach Bottom Atomic Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		CC OASD PGMS	LaCo PMSD	LaCo PMSD MES	LaCo SSD	LaCo SSD SMSch	YC RLASD	YC RLASD CES	YCRLASDLJMES	YC SESD	YC SESD D/PBES	MD EOC
Emergency Operations Management												
Mobilization	1a1											N
Facilities	1b1											
Direction and Control	1c1											N
Communications Equipment	1d1											N
Equipment and Supplies to Support Operations	1e1											N
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											N
Dose Assessment & PARs & PADs for the Emergency Event	2b1											N
Dose Assessment & PARs & PADs for the Emergency Event	2b2											N
PADs for disabilities & access/functional needs people	2c1											N
Radiological Assessment & Decision-making for Ingestion Pathway	2d1											
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1											
Protective Action Implementation												
Implementation of Emergency Worker Exposure Control	3a1											
Implementation of KI PAD for Institutionalized Individuals/Public	3b1											N
Implementation of PADs for disabilities & access/functional needs people	3c1											
Implementation of PADs for Schools	3c2	M	M	M	M	M	M	M	M	M	M	
Implementation of Traffic & Access Control	3d1											N
Impediments to Evacuation	3d2											
Availability & use of Commodity & Resource Information	3e1											
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2											
Implementation of Relocation/Reentry/Return Decisions	3f1											
Field Measurement and Analysis												
RESERVED	4a1											
Plume Phase Field Measurement & Analyses	4a2											
Plume Phase Field Measurement & Analyses	4a3											
Post Plume Phase Field Measurements & Sampling	4b1											
Laboratory Operations	4c1											
Emergency Notification and Public Info												
Activation of the Prompt Alert & Notification System	5a1											N
RESERVED	5a2											
Activation of the Back-up ANS	5a3											
Activation of the Exception Area ANS	5a4											
Emergency Information & Instructions for the Public/Media	5b1											N
Support Operations/Facilities												
Monitoring, Decontamination, & Registration of Evacuees	6a1											
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1											
Temporary Care of Evacuees	6c1											
Transportation/Treatment of Contaminated Injured Individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 5/6)

DATE: 2012-03-27 SITE: Peach Bottom Atomic Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		MD AAC MDE	MDE EEOF Ctsvl	CclCo EOC	CclCo BuRA	CclCo TACP	CclCo EWMDS PHS	CclCo RC RSHS	CclCo MDC RSHS	CclCo MCC RSHS	HfdCoEOC	HfdCoBuRA
Emergency Operations Management												
Mobilization	1a1	N		M							M	
Facilities	1b1											
Direction and Control	1c1	N	M	M							M	
Communications Equipment	1d1	N	M	M	M	M					M	M
Equipment and Supplies to Support Operations	1e1	N	M	M	M	M	M	M	M	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1	M		P							P	
Dose Assessment & PARs & PADs for the Emergency Event	2b1	N										
Dose Assessment & PARs & PADs for the Emergency Event	2b2	N										
PADs for disabilities & access/functional needs people	2c1			M							M	
Radiological Assessment & Decision-making for Ingestion Pathway	2d1											
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1											
Protective Action Implementation												
Implementation of Emergency Worker Exposure Control	3a1			M	M	M	M		M		M	M
Implementation of KI PAD for Institutionalized Individuals/Public	3b1			M	M	M					M	M
Implementation of PADs for disabilities & access/functional needs people	3c1			M							M	
Implementation of PADs for Schools	3c2			M							M	
Implementation of Traffic & Access Control	3d1			M		M						
Impediments to Evacuation	3d2			M		M						
Availability & use of Commodity & Resource Information	3e1											
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2											
Implementation of Relocation/Reentry/Return Decisions	3f1											
Field Measurement and Analysis												
RESERVED	4a1											
Plume Phase Field Measurement & Analyses	4a2	N										
Plume Phase Field Measurement & Analyses	4a3											
Post Plume Phase Field Measurements & Sampling	4b1											
Laboratory Operations	4c1											
Emergency Notification and Public Info												
Activation of the Prompt Alert & Notification System	5a1			M							M	
RESERVED	5a2											
Activation of the Back-up ANS	5a3			M	M						M	M
Activation of the Exception Area ANS	5a4											
Emergency Information & Instructions for the Public/Media	5b1			M							M	
Support Operations/Facilities												
Monitoring, Decontamination, & Registration of Evacuees	6a1						M		M			
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1						M					
Temporary Care of Evacuees	6c1									M		
Transportation/Treatment of Contaminated Injured Individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 6/6)

DATE: 2012-03-27 SITE: Peach Bottom Atomic Power Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		HfdCoTACP	HfdCoEMDSFHS	HfdCoRCFHS	HfdCoMDCFHS	HfdCoCCCPMHS	CclCo PSD	CclCo PSD CES	HfdCoPSD	HfdCoPSDNHES	HfdCoPSDNHHS	HfdCoPSDNHMS
Emergency Operations Management												
Mobilization	1a1											
Facilities	1b1											
Direction and Control	1c1											
Communications Equipment	1d1	M										
Equipment and Supplies to Support Operations	1e1	M	P	P	M	M						
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											
Dose Assessment & PARs & PADs for the Emergency Event	2b1											
Dose Assessment & PARs & PADs for the Emergency Event	2b2											
PADs for disabilities & access/functional needs people	2c1											
Radiological Assessment & Decision-making for Ingestion Pathway	2d1											
Radiological Assessment & Decision-making for Relocation/Reentry/Return	2e1											
Protective Action Implementation												
Implementation of Emergency Worker Exposure Control	3a1	M	M	M	M							
Implementation of KI PAD for Institutionalized Individuals/Public	3b1	M										
Implementation of PADs for disabilities & access/functional needs people	3c1											
Implementation of PADs for Schools	3c2						M	M	M	M	M	M
Implementation of Traffic & Access Control	3d1	M										
Impediments to Evacuation	3d2	M										
Availability & use of Commodity & Resource Information	3e1											
Preprinted Materials for Implementing PADs for Commodities & Resources	3e2											
Implementation of Relocation/Reentry/Return Decisions	3f1											
Field Measurement and Analysis												
RESERVED	4a1											
Plume Phase Field Measurement & Analyses	4a2											
Plume Phase Field Measurement & Analyses	4a3											
Post Plume Phase Field Measurements & Sampling	4b1											
Laboratory Operations	4c1											
Emergency Notification and Public Info												
Activation of the Prompt Alert & Notification System	5a1											
RESERVED	5a2											
Activation of the Back-up ANS	5a3											
Activation of the Exception Area ANS	5a4											
Emergency Information & Instructions for the Public/Media	5b1											
Support Operations/Facilities												
Monitoring, Decontamination, & Registration of Evacuees	6a1		M		M	M						
Monitoring/Decontamination of Emergency Workers/Equipment/Vehicles	6b1		M									
Temporary Care of Evacuees	6c1					M						
Transportation/Treatment of Contaminated Injured Individuals	6d1											

3.3 Criteria Evaluation Summaries

3.3.1 Maryland Jurisdictions

3.3.1.1 Maryland Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: None
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.b.2, 2.c.1, 3.b.1, 3.d.1, 5.a.1, 5.b.1.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 Maryland Accident Assessment Center, Maryland Department of the Environment

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 2.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 2.a.1.

ISSUE NO:: 46-12-2a1-P-03

CRITERION: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including use of KI, is in place for emergency workers, including provisions to authorize radiation exposure in excess of administrative limits or PAGs.

CONDITION: The Maryland Department of Environment (MDE) procedures do not address Total Effective Dose Equivalent (TEDE), or a conversion factor required for determining it.

POSSIBLE CAUSE: The MDE procedures overlook the subject of determining

whole body exposure.

REFERENCE: J.10.e,f; K.4

EFFECT: Without a correction factor to account for inhalation dose, emergency workers in the plume may be subject to a higher exposure level.

CORRECTIVE ACTION DEMONSTRATED: The MDE Procedures should be updated to address the alternatives for the TEDE/Committed Effective Dose Equivalent (CEDE) correction factor defined by FEMA for dose limits and internal dose options.

The MDE updated Emergeny Procedure (EP) 302 as indicated below. This planning issue will be closed.

H. Guidance on Dose Limits
Dose resulting from internal exposure can not be monitored in the field. Emergency worker dose will be limited to 1 REM except for conditions described in H.2.(Reference NUREG Criterion K.3.a., c. Dose Control and Limits, option 2)

e. NOT DEMONSTRATED: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.b.1, 2.b.2, 4.a.2.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2 Risk Jurisdictions

3.3.2.1 Cecil County Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 2.a.1.

ISSUE NO.: 46-12-2a1-P-01

CRITERION: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including use of KI, is in place for emergency workers, including provisions to authorize radiation exposure in excess of administrative limits or PAGs.

CONDITION: The Cecil County Response Plan does not address TEDE, or a conversion factor required for determining it.

POSSIBLE CAUSE: The Cecil County plan overlooks the subject of determining whole body exposure.

REFERENCE: J.10.e,f; K.4

EFFECT: Without a correction factor to account for inhalation dose, emergency workers in the plume may be subject to a higher exposure level.

RECOMMENDATION: The Cecil County Plan should be updated to address the alternatives for the TEDE/CEDE correction factor defined by FEMA for dose limits and internal dose options.

e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.2 Cecil County Back-up Route Alerting

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 5.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.3 Cecil County Traffic and Access Control Point

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.4 Cecil County Emergency Worker Emergency Worker Monitoring and Decontamination Station, Perryville High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1, 6.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: 6.a.1, 6.b.1.

ISSUE NO.: 46-12-6a1-A-1

CRITERION: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees.

CONDITION: The ORO did not completely monitor the emergency worker and no instructions were given to the worker on proper decontamination techniques.

POSSIBLE CAUSE: Lack of training and familiarity with procedures.

REFERENCE: NUREG-0654, K.5.a,b

EFFECT: The emergency worker was not completely monitored and additional contamination could have been missed and spread during improper decontamination procedures.

CORRECTIVE ACTION DEMONSTRATED: After retraining by the Assistant

Chief for Cecil County Emergency Management, the EWM&D staff demonstrated proper techniques and procedures for monitoring emergency workers. They completely monitored the whole body and properly completed the radiological monitoring forms.

ISSUE NO.: 46-12-6b1-A-2

CRITERION: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles.

CONDITION: The ORO did not completely monitor the emergency vehicle.

POSSIBLE CAUSE: Lack of training and familiarity with procedures.

REFERENCE: NUREG-0654, K.5.a,b

EFFECT: The emergency vehicle was not completely monitored and additional contamination could have been missed and/or spread during improper decontamination procedures.

CORRECTIVE ACTION DEMONSTRATED: After retraining by the Assistant Chief for Cecil County Emergency Management, the EWM&D staff demonstrated proper techniques and procedures for monitoring the emergency vehicles. The entire vehicle was monitored and the radiological monitoring form was completed.

c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.5 Cecil County Reception Center, Rising Sun High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.6 Cecil County Monitoring and Decontamination Center, Rising Sun High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.7 Cecil County Mass Care Center, Rising Sun High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 6.c.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.8 Harford County Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 5.a.1, 5.a.3, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 2.a.1.

ISSUE NO.: 46-12-2a1-P-02

CRITERION: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including use of KI, is in place for emergency workers, including provisions to authorize radiation exposure in excess of administrative limits or PAGs.

CONDITION: The Harford County Response Plan does not address TEDE, or a conversion factor required for determining it.

POSSIBLE CAUSE: The Harford County plan overlooks the subject of determining whole body exposure.

REFERENCE: J.10.e,f; K.4

EFFECT: Without a correction factor to account for inhalation dose, emergency workers in the plume may be subject to a higher exposure level.

RECOMMENDATION: The Harford County Plan should be updated to address the alternatives for the TEDE/CEDE correction factor defined by FEMA for dose limits and internal dose options.

e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.9 Harford County Back-up Route Alerting

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 5.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.10 Harford County Traffic and Access Control Point

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.11 Harford County Emergency Worker Monitoring and Decontamination Station, Fallston High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.a.1, 6.a.1, 6.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 1.e.1.

ISSUE NO.: 46-12-1e1-P-03

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: Ludlum Model 3 friskers do not have a source check range posted on the instrument.

POSSIBLE CAUSE: Harford County, Maryland procedures do not require calibration source range information to be listed in instrument calibration stickers.

REFERENCE: Criterion H.10.c Radiological Survey Instruments

EFFECT: The operational source check was not able to determine that the instrument would respond accurately and within an acceptable range.

RECOMMENDATION: Add source check range data to all instrument calibration stickers and add to plan.

e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.12 Harford County Reception Center, Fallston High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 1.e.1.

ISSUE NO.: 46-12-1e1-P-04

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: Ludlum Model 3 friskers do not have a source check range posted on the instrument.

POSSIBLE CAUSE: Harford County, Maryland procedures do not require

calibration source range information to be listed in instrument calibration stickers.

REFERENCE: Criterion H.10.c Radiological Survey Instruments

EFFECT: The operational source check was not able to determine that the instrument would respond accurately and within an acceptable range.

RECOMMENDATION: Add source check range data to all instrument calibration stickers and add to plan.

e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.13 Harford County Monitoring and Decontamination Center, Fallston High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.14 Harford County Congregate Care Center, Patterson Mill High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 6.a.1, 6.c.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.15 Cecil County Public School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.16 Cecil County Public School District, Conowingo Elementary School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.17 Harford County Public School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.18 Harford County Public School District, North Harford Elementary School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.19 Harford County Public School District, North Harford High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.20 Harford County Public School District, North Harford Middle School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.3 Pennsylvania Jurisdictions

3.3.3.1 Pennsylvania Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.d.1, 3.d.2, 5.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: 1.a.1.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.2 Pennsylvania Joint Information Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.3 Pennsylvania Accident Assessment Center, State Emergency Operations Center-Bureau of Radiation Protection

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.4 Pennsylvania Bureau of Radiation Protection Activities, Exelon Emergency Operating Facility, Coatesville

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.d.1, 1.e.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.5 Maryland Department of Environment Activities, Exelon Emergency Operating Facility, Coatesville, PA

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.c.1, 1.d.1, 1.e.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4 Risk Jurisdictions

3.3.4.1 Pennsylvania State Traffic and Access Control Point, State Police Barracks York

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None

g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.2 Chester County Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: None
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.3 Chester County Emergency Worker Monitoring and Decontamination Station, Penns Grove Middle School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1, 6.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.4 Lancaster County Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None

f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.5 Lancaster County Emergency Worker Monitoring and Decontamination Station, Lampeter/Strasburg School Complex

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1, 6.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: 1.e.1.

ISSUE NO.: 46-12-1e1-A-3

CRITERION: Equipment, maps, displays, dosimetry, KI, and other supplies are sufficient to support emergency operations.

CONDITION: Decontamination teams in the Emergency Worker Monitoring and Decontamination Center at the Lampeter-Strasburg School Complex attempted to perform operational checks of the Ludlum model 2241-2 with the back of the probe held against the source with the source door closed.

POSSIBLE CAUSE: Lack of training.

REFERENCE: NUREG-0654, H, 10

EFFECT: Improper operational checks may not have accurately detected contamination levels.

CORRECTIVE ACTION DEMONSTRATED: After re-training by the controller, the responders demonstrated the proper operational check techniques.

c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.6 Lancaster County Reception Center, Lancaster County Career and Technology Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.7 Lancaster County Monitoring and Decontamination Center, Penn Manor High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.8 Lancaster County Mass Care Center, Penn Manor High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 6.a.1, 6.c.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.9 Lancaster County Mass Care Center, Franklin & Marshall College

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.10 Lancaster County Mass Care Center, Garden Spot School Complex

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.11 Lancaster County Mass Care Center, Manor Middle School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.12 Lancaster County, Drumore Township Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.13 Lancaster County, Drumore Township, Back Up Route Alerting

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 5.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.14 Lancaster County, Quarryville Borough Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.15 York County Emergency Operation Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.c.2, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.16 York County Emergency Worker Monitoring and Decontamination Station, Brogue Ambulance Company

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1, 6.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: 6.a.1, 6.b.1.

ISSUE NO.: 46-12-6a1-A-4

CRITERION: The reception center facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees.

CONDITION: Monitoring staff did not adequately perform monitoring of emergency workers. Instrument probe was held too far and moved too fast over the individual being monitored.

POSSIBLE CAUSE: Monitoring staff was not familiar with their standard operating procedure, instrumentation, and did not have a good understanding of basic radiation principles.

REFERENCE: NUREG-0654 K.5.a

EFFECT: If the instrument probe is held too far away from the surface being

monitored and moved too fast, contamination may not be detected. Individuals could potentially be released as clean when in fact they are contaminated in excess of the decision criteria.

CORRECTIVE ACTION DEMONSTRATED: The monitoring staff received additional on-the-spot training during the exercise from the controller on proper survey technique. The team re-demonstrated monitoring with the survey meter and performed well, in accordance with their standard operating procedure.

ISSUE NO.: 46-12-6b1-A-5

CRITERION: The facility/ORO has adequate procedures and resources to accomplish monitoring and decontamination of emergency workers and their equipment and vehicles.

CONDITION: Monitoring staff did not adequately perform monitoring of an emergency vehicle. The instrument probe was not consistently held approximately one inch from the vehicle surface as per the procedure. The instrument probe was not facing up when monitoring wheel wells.

POSSIBLE CAUSE: Monitoring staff was not familiar with their standard operating procedure, instrumentation, and did not have a good understanding of basic radiation principles.

REFERENCE: NUREG-0654 K.5.a

EFFECT: If the instrument probe is held too far away from the surface being monitored, contamination may not be detected. If the instrument probe is not oriented in the direction of the contaminated surface, contamination may not be detected. The wheel wells have a high potential to be contaminated. Improper survey technique could potentially result in releasing an emergency vehicle that could be contaminated.

CORRECTIVE ACTION DEMONSTRATED: The monitoring staff received

additional on-the-spot training during the exercise from the controller on proper survey technique. The controller discussed areas on a vehicle which would be more likely to be contaminated. The team re-demonstrated monitoring with the survey meter and performed well, in accordance with their standard operating procedure.

c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.17 York County Reception Center Red Lion High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.18 York County Monitoring and Decontamination Center, Red Lion High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 3.a.1, 6.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.19 York County Mass Care Center, Red Lion Fire Company

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.20 York County Mass Care Center, Dallastown School Complex

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.21 York County Mass Care Center, Southwestern School Complex

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.22 York County Mass Care Center, Spring Grove School Complex

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.23 York County Mass Care Center, Spring Grove Middle School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.24 York County Mass Care Center, York Co 4-H

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.25 York County, Fawn Grove Borough/Fawn Township Emergency Operations Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.26 York County, Fawn Grove Borough/Fawn Township Back-up Route Alerting

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 5.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.27 Chester County, Oxford Area School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.28 Chester County, Oxford Area School District, Penns Grove Middle School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.29 Lancaster County, Penn Manor School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.30 Lancaster County, Penn Manor School District, Martic Elementary School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.31 Lancaster County, Solanco School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.32 Lancaster County, Solanco School District, Smith Middle School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.33 York County, Red Lion Area School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.34 York County, Red Lion Area School District, Clearview Elementary School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.35 York County, Red Lion Area School District, L. J. Macaluso Elementary School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.36 York County, South Eastern School District

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.4.37 York County, South Eastern School District, Delta/Peach Bottom Elementary School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.5 Support Jurisdictions

3.3.5.1 York County Mass Care Center, Red Lion High School

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.e.1, 6.a.1, 6.c.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.6 Private Organizations

3.3.6.1 Exelon Joint Information Center

In summary, the status of DHS/FEMA criteria for this location is as follows:

a. MET: 1.d.1, 1.e.1, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None

f. PRIOR ISSUES - RESOLVED: None

g. PRIOR ISSUES - UNRESOLVED: None

SECTION 4: CONCLUSION

As previously stated, the State and local emergency management organizations displayed knowledge of their emergency plans and procedures and adequately implemented them, thereby demonstrating reasonable assurance that those agencies can respond and protect the health, lives, and property of the residents of the PBAPS Emergency Planning Zone.

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 46-12-2a1-P-01	Criterion: 2a1
ISSUE: The Cecil County Response Plan does not address TEDE, or a conversion factor required for determining it.	
RECOMMENDATION: The Cecil County Plan should be updated to address the alternatives for the TEDE/CEDE correction factor defined by FEMA for dose limits and internal dose options.	
CORRECTIVE ACTION DESCRIPTION: The Cecil County Plan should be updated to address the alternatives for the TEDE/CEDE correction factor defined by FEMA for dose limits and internal dose options.	
CAPABILITY: Emergency Operations Center Management	PRIMARY RESPONSIBLE AGENCY: Cecil County Department of Emergency Services
CAPABILITY ELEMENT: Planning	START DATE: 2012-05-01
AGENCY POC: Steve Flickinger 410-392-2037	ESTIMATED COMPLETION DATE: 2013-05-01

Issue Number: 46-12-2a1-P-02	Criterion: 2a1
ISSUE: The Harford County Response Plan does not address TEDE, or a conversion factor required for determining it.	
RECOMMENDATION: The Harford County Plan should be updated to address the alternatives for the TEDE/CEDE correction factor defined by FEMA for dose limits and internal dose options.	
CORRECTIVE ACTION DESCRIPTION: The Harford County Plan should be updated to address the alternatives for the TEDE/CEDE correction factor defined by FEMA for dose limits and internal dose options.	
CAPABILITY: Emergency Operations Center Management	PRIMARY RESPONSIBLE AGENCY: Harford County Department of Emergency Services
CAPABILITY ELEMENT: Planning	START DATE: 2012-05-01
AGENCY POC: Rick Woods 410-495-3866	ESTIMATED COMPLETION DATE: 2013-05-01

Issue Number: 46-12-1e1-P-03	Criterion: 1e1
ISSUE: Ludlum Model 3 friskers do not have a source check range posted on the instrument.	
RECOMMENDATION: Add source check range data to all instrument calibration stickers and add to plan.	
CORRECTIVE ACTION DESCRIPTION: Harford County shall ensure source check range data are added to all instrument calibration stickers and update the plan to reflect this requirement.	
CAPABILITY: Emergency Operations Center Management	PRIMARY RESPONSIBLE AGENCY: Harford County Department of Emergency Services
CAPABILITY ELEMENT: Planning	START DATE: 2012-05-01
AGENCY POC: Michael Brunicke 410-638-3407	ESTIMATED COMPLETION DATE: 2013-05-01

Issue Number: 46-12-1e1-P-04	Criterion: 1e1
ISSUE: Ludlum Model 3 friskers do not have a source check range posted on the instrument.	
RECOMMENDATION: Add source check range data to all instrument calibration stickers and add to plan.	
CORRECTIVE ACTION DESCRIPTION: Harford County shall ensure source check range data are added to all instrument calibration stickers and update the plan to reflect this requirement.	
CAPABILITY: Emergency Operations Center Management	PRIMARY RESPONSIBLE AGENCY: Harford County Department of Emergency Services
CAPABILITY ELEMENT: Planning	START DATE: 2012-05-01
AGENCY POC: Michael Brunicke 410-638-3407	ESTIMATED COMPLETION DATE: 2013-05-01

APPENDIX B: EXERCISE TIMELINE

The tables on the following pages present the times at which key events and activities occurred during the PBAPS exercise on March 27, 2012. Also included are times notifications were made to the participating jurisdictions and functional entities. A chronology of events and activities are part of the scenario which contained the Injects and Master Scenario Events List (MSEL).

Table 1 - Exercise Timeline
DATE: 2012-03-27, SITE: Peach Bottom Atomic Power Station, PA

Emergency Classification Level or Event	Time Utility Declared	PA EOC	PAAACSEOCBRP	EJIC	CC EOC	LaCoEOC	LaCoDrmrTwpEOC
Unusual Event	N/A	NA		NA	NA	NA	N/A
Alert	1620	1629		1630	1637	1633	1635
Site Area Emergency	1740	1740		1727	1739	1740	1814
General Emergency	1935	1945		1939	1943	1945	1956
Simulated Rad. Release Started	1935	1926		1950	1944	1950	1956
Simulated Rad. Release Terminated	On going	NA		NA	NA	NA	NA
Facility Declared Operational		1648		1951	1640	1718	1655
Declaration of State of Emergency		1815		1830	1830	NA	1905
Exercise Terminated		2110		2125	2115	2102	2050
Early Precautionary Actions:		1713		1755	1752	1752	1834
Rail, Waterway, Park/Recreation Air		1713		1755	1752	1752	1834
1st Protective Action Decision:		1805		1810	1807	1810	1818
1st Siren Activation		1820		1820	1820	1820	1820
1st EAS or EBS Message		1823		1823	1823	1823	1823
2nd Protective Action Decision:		2004		2030	2006	2010	2015
2nd Siren Activation		2020		2020	2020	2020	2020
2nd EAS or EBS Message		2023		2023	2023	2023	2023
3rd Protective Action Decision:		NA		NA	NA	NA	NA
3rd Siren Activation		NA		NA	NA	NA	NA
3rd EAS or EBS Message		NA		NA	NA	NA	NA
KI Administration Decision:		2004		2030	2004	2020	2023

Table 1 - Exercise Timeline

DATE: 2012-03-27, SITE: Peach Bottom Atomic Power Station, PA

Emergency Classification Level or Event	Time Utility Declared	LaCoQvllBrEOC	YCEOC	YCFGB/FTEOC	MD EOC	MD AAC MDE	CcICo EOC
Unusual Event	N/A	NA	NA	NA	NA	NA	NA
Alert	1620	1634	1651	1653	1626	1635	1629
Site Area Emergency	1740	1750	1753	1756	1735	1746	1747
General Emergency	1935	1955	1951	1957	1942	1946	1945
Simulated Rad. Release Started	1935	1955	1951	1951	1945	1932	1945
Simulated Rad. Release Terminated	On going	NA	NA	NA	NA	NA	NA
Facility Declared Operational		1644	1704	1735	1634	1720	1644
Declaration of State of Emergency		2032	1829	1837	2010	2015	2057
Exercise Terminated		2106	2124	2040	2100	2100	2058
Early Precautionary Actions:		1834	1705	1705	1750	NA	NA
Rail, Waterway, Park/Recreation Air		1834	1705	1705	Not Observed	Not Observed	1754
1st Protective Action Decision:		1818	1820	1820	1810	1813	1810
1st Siren Activation		2020	1820	1820	1820	NA	1821
1st EAS or EBS Message		1838	1823	1823	1823	NA	NA
2nd Protective Action Decision:		2017	2020	2020	2004	2005	2005
2nd Siren Activation		2023	2020	2020	2020	NA	2020
2nd EAS or EBS Message		2023	2020	2023	2023	NA	NA
3rd Protective Action Decision:		NA	NA	NA	NA	2014	NA
3rd Siren Activation		NA	NA	NA	NA	2020	NA
3rd EAS or EBS Message		NA	NA	NA	NA	2023	NA
KI Administration Decision:		2018	2003	2012	2010	2010	2005

Table 1 - Exercise Timeline
DATE: 2012-03-27, SITE: Peach Bottom Atomic Power Station, PA

Emergency Classification Level or Event	Time Utility Declared	HfdCoEOC
Unusual Event	N/A	NA
Alert	1620	1627
Site Area Emergency	1740	1747
General Emergency	1935	1945
Simulated Rad. Release Started	1935	1945
Simulated Rad. Release Terminated	On going	NA
Facility Declared Operational		1645
Declaration of State of Emergency		2023
Exercise Terminated		2057
Early Precautionary Actions:		1727
Rail, Waterway, Park/Recreation Air		1754
1st Protective Action Decision:		1811
1st Siren Activation		1820
1st EAS or EBS Message		NA
2nd Protective Action Decision:		2006
2nd Siren Activation		2020
2nd EAS or EBS Message		NA
3rd Protective Action Decision:		NA
3rd Siren Activation		NA
3rd EAS or EBS Message		NA
KI Administration Decision:		2012

APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Evaluators and Team Leaders for the PBAPS 2012 out of sequence evaluations held during the weeks of February 23, 2012, March 1, 2012, and the Plume Exercise evaluated the week of March 26, 2011. The following individuals made up the evaluation team for those evaluations:

Darrell Hammons, DHS, Radiological Assistance Committee Chairperson
Michael E. Shuler, Sr., DHS, Project Officer and Site Specialist
Richard Kinard, DHS, Team Leader, Cecil County (MD) EOC
Robert Neff, DHS, Team Leader, Harford County (MD) EOC
Barton Freeman, DHS, Harford County (EOC)
John Price, DHS, Team Leader, Commonwealth of Pennsylvania EOC
Martin Vyenielo, DHS, Team Leader, Technical Evaluations
Matt Wiedemer, DHS, Chester County (PA) EOC
Tina Lai-Thomas, DHS, Lancaster County (PA) EOC
Joseph Suders, DHS, Team Leader, York County (PA) EOC
Lee Torres, DHS, York County (PA) EOC
Daniel Lerch, DHS, Team Leader, Schools

All Re-demonstrations were conducted as part of the plume exercise on March 28, 2012, for Cecil, Lancaster and York Counties.

Additional evaluation assistance was provided by numerous FEMA Regions, Other Governmental Agencies (OGA) and ICF Consulting. The following individuals represent the rest of the evaluation team:

Region I: Ingrid Bruns, Helen Laforge, Taneeka Hollins, John Rice
Region II: Chris Cammarata, Patricia Mason, Brain Hasemann, Miriam Weston
Region V: Karl Rabenhorst,
Region IX: Paul Anderson, Richard Echavarria
Region X: Bill Webb
FEMA Hq: Larry Broockerd, Bridget Ahlgrim, LaShawn Halsey, Rebecca Fontenot

OFA: Marcos Aquino, EPA, Emily Falone, HHS

ICF: Roger Kowieski, Ronald Bernacki, Michael Burriss, Bart Ray, David Seebart, Michael Henry, Cheryl Weaver, Thomas Hegele, Quirino Iannazzo, David Petta, Rosemary Samsel, Danny Lomis. Deborah Blunt, Keith Earnshaw, Paul, Nied, Roger Jobe, Marynette Herdon, John Wills, Carl Wentzell, Gary Bolender, Richard Smith, David White, James Hickey, Debra Schneck, Henry Christiansen, Alan Bevan, Roy Smith

DATE: 2012-03-27, SITE: Peach Bottom Atomic Power Station, PA

LOCATION	EVALUATOR	AGENCY
Pennsylvania Emergency Operations Center	Emily Falone Rebecca Fontenot Roy Smith	USD HHS FEMA HQ ICFI
Pennsylvania Joint Information Center	Paul Nied	ICFI
Pennsylvania Accident Assessment Center, State Emergency Operations Center-Bureau of Radiation Protection	Alan Bevan *Martin Vyenielo	ICFI FEMA RIII
Pennsylvania Bureau of Radiation Protection Activities, Exelon Emergency Operating Facility, Coatesville	James Hickey	ICFI
Maryland Emergency Operations Center	*Daniel Lerch	FEMA RIII
Maryland Accident Assessment Center, Maryland Department of the Environment	*Martin Vyenielo	FEMA RIII
Maryland Department of Environment Activities, Exelon Emergency Operating Facility, Coatesville, PA	James Hickey	ICFI
Pennsylvania State Traffic and Access Control Point, State Police Barracks York	Karl Rabenhorst	FEMA Reg V
Chester County Emergency Operations Center	*Matthew Wiedemer	FEMA RIII
Chester County Emergency Worker Monitoring and Decontamination Station, Penns Grove Middle School	Marcos Aquino	EPA RIII
Lancaster County Emergency Operations Center	Bridget Ahlgrim Henry Christiansen *Tina Lai-Thomas Debra Schneck	FEMA HQ ICFI FEMA RIII ICFI
Lancaster County Emergency Worker Monitoring and Decontamination Station, Lampeter/Strasburg School Complex	Marynette Herndon	ICFI
Lancaster County Reception Center, Lancaster County Career and Technology Center	Larry Broockerd	FEMA HQ
Lancaster County Monitoring and Decontamination Center, Penn Manor High School	James Hickey	ICFI
Lancaster County Mass Care Center, Penn Manor High School	Karl Rabenhorst	FEMA Reg V
Lancaster County Mass Care Center, Franklin & Marshall College	*Michael Shuler	FEMA RIII
Lancaster County Mass Care Center, Garden Spot School Complex	*Michael Shuler	FEMA RIII
Lancaster County Mass Care Center, Manor Middle School	*Michael Shuler	FEMA RIII
Lancaster County, Drumore Township Emergency Operations Center	Lashawn Halsey David White	FEMA HQ ICFI
Lancaster County, Drumore Township, Back Up Route Alerting	Miriam Weston	FEMA RII
Lancaster County, Quarryville Borough Emergency Operations Center	Helen LaForge Richard Smith	FEMA RI ICF
York County Emergency Operation Center	Gary Bolender Roger Jobe *Joseph Suders Lee Torres	ICFI ICFI FEMA RIII FEMA RIII
York County Emergency Worker Monitoring and Decontamination Station, Brogue Ambulance Company	Deborah Blunt	ICFI
York County Reception Center Red Lion High School	Chris Cammarata	FEMA RII
York County Monitoring and Decontamination Center, Red Lion High School	Keith Earnshaw	ICF
York County Mass Care Center, Red Lion Fire Company	*Michael Shuler	FEMA RIII
York County Mass Care Center, Dallastown School Complex	*Michael Shuler	FEMA RIII
York County Mass Care Center, Southwestern School Complex	*Michael Shuler	FEMA RIII

York County Mass Care Center, Spring Grove School Complex	*Michael Shuler	FEMA RIII
York County Mass Care Center, Spring Grove Middle School	*Michael Shuler	FEMA RIII
York County Mass Care Center, York Co 4-H	*Michael Shuler	FEMA RIII
York County, Fawn Grove Borough/Fawn Township Emergency Operations Center	Paul Anderson Carl Wentzell	FEMA RIX ICFI
York County, Fawn Grove Borough/Fawn Township Back-up Route Alerting	Brian Hasemann	FEMA RII
Chester County, Oxford Area School District	John Wills	ICFI
Chester County, Oxford Area School District, Penns Grove Middle School	Marcos Aquino	EPA RIII
Lancaster County, Penn Manor School District	Taneeka Hollins	FEMA RI
Lancaster County, Penn Manor School District, Martic Elementary School	Marynette Herndon	ICFI
Lancaster County, Solanco School District	Larry Broockerd	FEMA HQ
Lancaster County, Solanco School District, Smith Middle School	Roger Jobe	ICFI
York County, Red Lion Area School District	Chris Cammarata	FEMA RII
York County, Red Lion Area School District, Clearview Elementary School	Michael Burriss	ICFI
York County, Red Lion Area School District, L. J. Macaluso Elementary School	Paul Nied	ICFI
York County, South Eastern School District	Keith Earnshaw	ICF
York County, South Eastern School District, Delta/Peach Bottom Elementary School	Deborah Blunt	ICFI
Cecil County Emergency Operations Center	Richard Echavarria *Richard Kinard Danny Loomis Bill Webb	FEMA RIX FEMA RIII ICFI FEMA RX
Cecil County Back-up Route Alerting	Rosemary Samsel	ICFI
Cecil County Traffic and Access Control Point	David Petta	ICFI
Cecil County Emergency Worker Emergency Worker Monitoring and Decontamination Station, Perryville High School	Bart Ray	ICFI
Cecil County Reception Center, Rising Sun High School	Ronald Biernacki	ICFI
Cecil County Monitoring and Decontamination Center, Rising Sun High School	Ronald Biernacki	ICFI
Cecil County Mass Care Center, Rising Sun High School	Quirino Iannazzo	ICFI
Harford County Emergency Operations Center	Ingrid Bruns Barton Freeman Thomas Hegele *Robert Neff	FEMA RI FEMA RIII ICFI FEMA RIII
Harford County Back-up Route Alerting	Patricia Mason	FEMA RII
Harford County Traffic and Access Control Point	Cheryl Weaver	ICF
Harford County Emergency Worker Monitoring and Decontamination Station, Fallston High School	Michael Henry	ICFI
Harford County Reception Center, Fallston High School	David Seebart	ICFI
Harford County Monitoring and Decontamination Center, Fallston High School	David Seebart	ICFI
Harford County Congregate Care Center, Patterson Mill High School	Taneeka Hollins	FEMA RI
Cecil County Public School District	Ronald Biernacki	ICFI
Cecil County Public School District, Conowingo Elementary School	Michael Burriss	ICFI
Harford County Public School District	Bart Ray	ICFI

Harford County Public School District, North Harford Elementary School	David Seebart	ICFI
Harford County Public School District, North Harford High School	Michael Henry	ICFI
Harford County Public School District, North Harford Middle School	Quirino Iannazzo	ICFI
York County Mass Care Center, Red Lion High School	Chris Cammarata	FEMA RII
Exelon Joint Information Center	Roger Kowieski	ICFI
* Team Leader		

APPENDIX D: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
AAC	Accident Assessment Center
ACP	Access Control Point
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Service
CART	County Animal Response Team
CC	Cecil County
CEDE	Committed Effective Dose Equivalent
CES	Conowingo Elementary School
CO	Communications Officer
CVFC	Citizens Volunteer Fire Company
DA	Dose Assessment
DAT	Disaster Assistance Team
DRD	Direct Reading Dosimeter
DTEOC	Drumore Township Emergency Operations Centers
EAS	Emergency Alert System
ECC	Emergency Communications Center
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMC	Emergency Management Coordinator
EMD	Emergency Management Director
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operations Plan
EPDS	Emergency Preparedness Display System
EPLO	Emergency Preparedness Liaison Officers
EPZ	Emergency Planning Zone
ERDS	Emergency Response Data System
ESF	Emergency Support Functions
EW	Emergency Workers
FAEOC	Fawn Area Emergency Operations Center
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team

FSAR	Final Safety Analysis Report
FT	Field Team
GE	General Emergency
HCEMA	Hartford County Emergency Management Agency
HCEOC	Harford County Emergency Operations Center
HCPSD	Hartford County Public School District
HMC	Hazardous Material Coordinator
IM	Incident Manager
JIC	Joint Information Center
LCCC	Lancaster County-Wide Communications Center
LCEMA	Lancaster County Emergency Management Agency
LCEOC	Lancaster County Emergency Operations Center
MCC	Mass Care Center
MEMA	Maryland Emergency Management Agency
MSEL	Master Scenario Events List
NARS	Nuclear Accident Reporting System
NHHS	North Harford High School
NHMS	North Harford Middle School
NRC	Nuclear Regulatory Commission
OSL	Optical Stimulated Luminescence
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PBAPS	Peach Bottom Atomic Power Station
PEMA	Pennsylvania Emergency Management Agency
PIO	Public Information Officer
PM	Portal Monitor
PRD	Permanent Record Dosimeter
PSO	Police Services Officer
PSP	Pennsylvania State Police
PTC	Pennsylvania Turnpike Commission
PUC	Public Utilities Commission
RAC	Radiological Assistance Committee
RACES	Radio Amateur Civil Emergency Services
RAD	Radiological Assessment Director
RAM	Radiological Assessment Manager
RC	Reception Center
REM	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RLASD	Red Lion Area School District

RO	Radiological Officer
RSO	Radiation Safety Officer
SAE	Site Area Emergency
SEOC	State Emergency Operations Center
SESD	South Eastern School District
SEVAN	State Emergency Voice Activation Network
SNB	Special News Bulletins
SSO	School Services Officer
TCP	Traffic Control Point
TEDE	Total Effective Dose Equivalent
VFD	Volunteer Fire Department
YCEOC	York County Emergency Operations Center

APPENDIX E: EXERCISE PLAN

The enclosed Exercise Plan was created as an overall tool for facilitation and implementation of the Peach Bottom Atomic Power Station 2012 Plume Exercise and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program (HSEEP) with the Radiological Emergency Preparedness Program Exercise Methodology. The Exercise Plan was originally drafted and published in coordination with the Pennsylvania Emergency Management Agency (PEMA) and the Maryland Emergency Management Agency (MEMA) as an independent document and is annexed here.

The "Peach Bottom Atomic Power Station's Extent of Play 2012 Radiological Emergency Preparedness Exercise" was negotiated and agreed upon by FEMA Region III, PEMA, MEMA, and the Emergency Management Agencies of the Risk Counties. It is included as an Appendix of the Exercise Plan.

NATIONAL EXERCISE PROGRAM
EXERCISE PLAN

STATE OF MARYLAND / COMMONWEALTH OF PENNSYLVANIA
PEACH BOTTOM ATOMIC POWER STATION
FEMA EVALUATED REP EXERCISE

FEMA

U.S. DEPARTMENT OF HOMELAND SECURITY

PREFACE

The Peach Bottom Atomic Power Station 2012 Plume Exercise Evaluated Full Scale Exercise (FSE) is sponsored by the Federal Emergency Management Agency (FEMA), the Pennsylvania Emergency Management Agency (PEMA), and the Maryland Emergency Management Agency (MEMA). This Exercise Plan (ExPlan) was produced with input, advice, and assistance from the Exercise Planning Team (EPT), which followed the guidance set forth in the Federal Emergency Management Agency, Homeland Security Exercise and Evaluation Program (HSEEP).

The ExPlan gives officials, observers, media personnel, and players from participating organizations the information necessary to observe or participate in a nuclear power plant accident response exercise focusing on participants' emergency response plans, policies, and procedures as they pertain to this type of event. The information in this document is current as of the date of publication and is subject to change as dictated by the EPT.

The Peach Bottom Atomic Power Station 2012 Plume Exercise is an *unclassified exercise.* The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, observers, Controllers and Evaluators, but Players may view other materials deemed necessary to their performance. The ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook, the Master Scenario Event List (MSEL), and any other documents containing information related to the exercise scenario are restricted documents intended for Controllers and Evaluators only. The Exercise Scenario and any related information is not to be shared or viewed with exercise participants, including the list of which agencies are to be federally evaluated.*

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and to protect this material in accordance with current jurisdictional directives. Public release of exercise materials to third parties is at the discretion of Department of Homeland Security, FEMA and the EPT.

HANDLING INSTRUCTIONS

1. The title of this document is the *Peach Bottom Atomic Power Station 2012 Plume Exercise Plan (ExPlan).*
2. Some of the information gathered in this ExPlan is *For Official Use Only (FOUO)* and should be handled as sensitive information not to be disclosed. This document should be safeguarded, handled, transmitted, and stored in accordance with appropriate security directives. Reproduction of this document, in whole or in part, without prior approval from the Exercise Planning Team is prohibited.
3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, will be stored in a locked container or area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
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CHAPTER 1: GENERAL INFORMATION

Introduction

The Peach Bottom Atomic Power Station 2012 Plume Exercise is a full-scale exercise (FSE) designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. An FSE is a complex event that requires detailed planning. To conduct an effective exercise, subject matter experts (SMEs) and local representatives from numerous agencies have taken part in the planning process and will take part in exercise conduct and evaluation.

This Exercise Plan (ExPlan) was produced at the direction of the Federal Emergency Management Agency, the Pennsylvania Emergency Management Agency, and the Maryland Emergency Management Agency with the input, advice, and assistance of the Exercise Planning Team. The Peach Bottom Atomic Power Station 2012 Plume Exercise is evidence of the strong partnership between State and local jurisdictions in preparing for response to an event involving the threat of a radiological release or any other major incident at a Nuclear Power Plant.

Confidentiality

The Peach Bottom Atomic Power Station 2012 Plume Exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance. The ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook, the Master Scenario Event List (MSEL), and any other documents containing information related to the exercise scenario are restricted documents intended for Controllers and Evaluators only. The Exercise Scenario and any related information is not to be shared or viewed with exercise participants, including the list of which agencies are to be federally evaluated.*

All exercise participants should use appropriate guidelines to ensure the proper control of information within their areas of expertise and protect this material in accordance with current Federal Emergency Management Agency, Pennsylvania Emergency Management Agency, and Maryland Emergency Management Agency directives.

Public release of exercise materials to third parties is at the discretion of the Federal Emergency Management Agency (FEMA) and the Exercise Planning Team.

Purpose

The purpose of this exercise is to evaluate player actions against current response plans and capabilities for a nuclear power plant-related incident, and to comply with the requirements of 44 CFR 350 and the guidelines of NUREG 0654/FEMA-REP-1. Exercise planners utilized the

elements described in the 67 FR 20580 (April 25, 2002) and Interim Radiological Emergency Preparedness (REP) Program Manual (August 2002) to develop this exercise.

The objective of the Federal Emergency Management Agency, the Pennsylvania Emergency Management Agency, and the Maryland Emergency Management Agency is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

Target Capabilities

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

The capabilities listed below have been selected by the Exercise Planning Team (EPT) from the priority capabilities identified in Pennsylvania and Maryland Multi-Year TEP and the FEMA Interim Radiological Emergency Preparedness Program Manual (August 2002), Exercise Evaluation Criteria. These capabilities provide the foundation for development of the exercise objectives and scenario, as the purpose of this exercise is to measure and validate performance of these capabilities and their associated critical tasks.

- Communications
- Emergency Operations Center Management
- Responder Safety and Health
- Public Safety and Security Response
- WMD/HazMat Response and Decontamination
- Citizen Evacuation and Shelter-In-Place
- Emergency Public Information and Warning
- Mass Care (Sheltering, Feeding, and Related Services)

Exercise Objectives

The Emergency Preparedness Evaluation Areas – the elements and sub-elements – for this exercise are those that are required to be demonstrated in every exercise, as required by 67 FR 20580 (April 25, 2002) and the *Interim REP Program Manual (August 2002)*. Appendix B Pennsylvania Extent of Play and Appendix C Maryland Extent of Play shows the emergency preparedness elements that are required to be demonstrated in the Peach Bottom Atomic Power Station 2012 Plume Exercise, along with the level of demonstration that will be displayed in the exercise (i.e., fully demonstrated, limited demonstration, simulated, out-of-sequence interviews, not demonstrated).

The objective of this exercise is to demonstrate reasonable assurance that the health and safety of the public can be protected, through successful demonstration of tasks identified in Appendix B and Appendix C.

Outstanding Issues

There are no unresolved Areas Requiring Corrective Action (ARCA) as a result of the previous FEMA evaluated PBAPS exercise in June 2010 for the State of Maryland and Commonwealth of Pennsylvania. Any outstanding issues are documented in the Improvement Plan.

CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The Peach Bottom Atomic Power Station 2012 Plume Exercise is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at a nuclear power plant. The Peach Bottom Atomic Power Station 2012 Plume Exercise will be conducted on March 27, 2012. Out of sequence evaluations will be conducted as follows:

Pennsylvania Mass Care Center Walkdown Inspections conducted in Lancaster County, February 23, 2012 and York County March 1, 2012

Harford County Schools - March 27th (morning)

Schools – March 28th (morning)

Pennsylvania State Police – March 28th (morning)

Emergency Worker Monitoring & Decontamination – March 28th (evening)

Reception Centers – March 28th (evening)

Mass Care Shelters – March 28th (evening)

Exercise play on March 27, 2012 is scheduled to end at 2200 hours or before. The exercise may conclude when the Lead Controller in consultation with FEMA and the Utility determine that the exercise objectives have been met at each venue.

Assumptions

Assumptions constitute the implied factual foundation for the exercise and, hence, are assumed to be present before the start of the exercise. The following general assumptions apply to the Peach Bottom Atomic Power Station 2012 Plume Exercise:

- The exercise will be graded against the REPP criteria. Elements outside the scope of the REP criteria will not be graded.
- This exercise will be conducted in a no-fault learning environment wherein systems and processes, not individuals, will be evaluated.
- Exercise simulation will be realistic and plausible, containing sufficient detail from which to respond.

- Exercise players will react to the information and situations as they are presented, in the same manner as if this had been a real event.

Constructs and Constraints

Constructs are exercise devices designed to enhance or improve exercise realism. Alternatively, constraints are exercise limitations that may detract from exercise realism. Constraints may be the inadvertent result of a faulty construct or may pertain to financial and staffing issues. Although there are a number of constructs and constraints (also known as exercise artificialities) for any exercise, the EPT recognizes and accepts the following as necessary:

- Players will utilize normal, everyday communications methods, channels, and equipment.
- Out-of-Sequence play is allowed.
- Certain simulations are allowed.

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

Exercise Participants

The following are the categories of participants involved in this exercise; note that the term "participant" refers to all categories listed below, not just those playing in the exercise:

- *Players.* Players are agency personnel who have an active role in responding to the simulated emergency and perform their regular roles and responsibilities during the exercise. Players initiate actions that will respond to and mitigate the simulated emergency.
- *Controllers.* Controllers set up and operate the exercise site; plan and manage exercise play; act in the roles of response individuals and agencies not playing in the exercise. Controllers direct the pace of exercise play and routinely include members from the exercise planning team. They provide key data to players and may prompt or initiate certain player actions to ensure exercise continuity.
- *Simulators.* Simulators are control staff personnel who role-play as nonparticipating organizations or individuals. They most often operate out of the Simulation Cell (SimCell), but may occasionally have face-to-face contact with players. Simulators function semi-independently under the supervision of the Lead Controller, enacting roles (e.g., as media reporters or next of kin) in accordance with instructions provided in the Master Scenario Events List (MSEL). All simulators are ultimately accountable to the Lead Controller. For this exercise, the SimCell will be restricted to the Rumor Control Function.

- *Evaluators.* Evaluators are chosen to evaluate and provide feedback on a designated functional area of the exercise. They are chosen based on their expertise in the functional area(s) they have been assigned to review during the exercise and their familiarity with local emergency response procedures. Evaluators assess and document players' performance against established emergency plans and exercise evaluation criteria, in accordance with HSEEP standards and within the bounds of REP Program guidance and regulations. They are typically chosen from amongst planning committee members or the agencies/organizations that are participating in the exercise. FEMA evaluators are members of the Region III REP Program staff, representatives of the Radiological Assistance Committee, other FEMA employees, and contractors. FEMA Evaluators will not serve as Controllers.

- *Actors.* Actors are exercise participants who act or simulate specific roles during exercise play. They are typically volunteers who have been recruited to play the role of victims or other bystanders.

- *Observers.* Observers visit or view selected segments of the exercise. Observers do not play in the exercise, and do not perform any control or evaluation functions. Observers will view the exercise from a designated observation area and will be asked to remain within the observation area during the exercise. PEMA observers will be present at selected locations as assigned by the Lead Controller. PEMA observers will receive an observer briefing prior to the day of the exercise. Any V.I.P.s or other visitors will be handled by each agency or location (Municipal EOC, County EOC, etc.) according to that agencies policies and procedures.

- *Media Personnel.* Some media personnel may be present as observers pending approval by the Exercise Director in coordination with the PEMA Press Office. Media interaction may also be simulated by Actors at the Joint Information Center during the simulated press briefing to enhance realism and meet related exercise objectives.

- *Support Staff.* Exercise support staff includes individuals who are assigned administrative and logistical support tasks during the exercise (i.e. registration, catering, etc).

Exercise Tools

Controller and Evaluator Handbooks

The Peach Bottom Atomic Power Station 2012 Plume Exercise Controller and Evaluator Handbooks are designed to help exercise Controllers and Evaluators conduct and evaluate an effective exercise. These Handbooks also enable Controllers and Evaluators to understand their roles and responsibilities in exercise execution and evaluation. Should a Player, Observer, or media representative find an unattended Handbook, it should be provided to the nearest Controller or Evaluator.

Master Scenario Events List

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

For the Peach Bottom Atomic Power Station 2012 Plume Exercise the MSEL will be used primarily for out of sequence exercise play. During the plume phase the exercise will be driven by the simulator at the utility. A supplemental MSEL for the plume phase portion of the exercise will also be utilized. Notifications will go out from the utility in the same manner as they would in a real event with all communications being preceded and terminated by the phrase "This is a Drill". Additionally, Bureau of Radiation Protection (BRP) field teams will be utilizing "exercise measuring instruments" that receive input from the Virtual Plume software. The Virtual Plume software will be programmed to reflect expected conditions at any given time during the exercise.

The MSEL's are controlled documents are will only be made available to exercise evaluators, controllers, and observers.

Exercise Implementation

Exercise Play

Exercise play will begin at approximately 1600 hours with a situation update going to each participating venue. Play will proceed according to the events outlined in the MSEL, in accordance with established plans and procedures. The exercise will conclude upon the completion of operations and attainment of the exercise objectives, as determined by the Lead Controller after consultation with FEMA and the Utility.

Exercise Rules

The following are the general rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by control staff.

- All communications (written, radio, telephone, etc.) made during the exercise will begin and end with the phrase, ***"This is an exercise."***

Exercise participants placing telephone calls or initiating radio communication with the SimCell must identify the organization, agency, office, and/or individual with whom they wish to speak.

Safety Requirements

General

Exercise participant safety takes priority over exercise events. Although the organizations involved in the Peach Bottom Atomic Power Station 2012 Plume Exercise come from various response agencies, they share the basic responsibility for ensuring a safe environment for all personnel involved in the exercise. In addition, aspects of an emergency response are dangerous. Professional health and safety ethics should guide all participants to operate in their assigned roles in the safest manner possible. The following general requirements apply to the exercise:

- An exercise Safety Controller will be identified and be responsible for participant safety.
- All exercise controllers, evaluators, and staff will serve as safety observers while the exercise activities are underway. Any safety concerns must be immediately reported to the Safety Controller.
- Participants will be responsible for their own and each other's safety during the exercise. It is the responsibility of all persons associated with the exercise to stop play if, in their opinion, a real safety problem exists. Once the problem is corrected, exercise play can be restarted.
- All organizations will comply with their respective environmental, health, and safety plans and procedures, as well as the appropriate Federal, State, and local environmental health and safety regulations.

Exercise Setup

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

Accident Reporting and Real Emergencies

- Anyone observing a participant who is seriously ill or injured will provide aid within their training, call the County 911 Center for additional aid or enlist the aid of another person to call, and advise the nearest controller. Anyone calling County 911 will use the phrase "this is not a drill" prior to explaining the injury or illness.

- The controller who is made aware of a real emergency will contact the County 911 center (if this call has not already been made) and request the appropriate aid. The controller will use the phrase "this is not a drill" prior to explaining the injury or illness.
- The controller will then contact the Lead Controller and Exercise Director with the following information:
  - Venue/function
  - Location within the venue/function
  - Condition of injured parties
  - Requirements for medical aid, fire suppression, rescue, or security resources.
- If the nature of the emergency requires a suspension of the exercise at the venue/function, all exercise activities at that facility will immediately cease. Exercise play may resume at that venue/function once the emergency situation has been addressed.
- Exercise play at other venue/functions should not cease if one venue/function has declared a "Real-World Emergency" unless they are reliant on the affected venue.
- If a real emergency occurs that affects the entire exercise, the exercise may be suspended or terminated at the discretion of the Exercise Director and Lead Controller. The notification will be made from the State Emergency Operations Center. The Lead Controller will notify the SimCell by phone.

Site Access

Security

Exercise play for the Peach Bottom Atomic Power Station 2012 Plume Exercise will be conducted at numerous sites with varying degrees of security requirements. The Peach Bottom Atomic Power Station will control entry to the Utility and the Emergency Operations Facility. Security at State, County, and Municipal Emergency Operations Centers will be conducted according to their individual security procedures. Individual Site Controllers will be in charge of entry into their respective exercise sites. To prevent confusion and interruption of the exercise, access to the exercise sites and the SimCell will be limited to exercise participants and approved Observers only. Players should advise their venue's controller or evaluator if an unauthorized person is present. Each organization should follow its internal security procedures, augmented as necessary to comply with exercise requirements.

Observers and Liaison Officers

PEMA will assign Observers and Liaison Officers to each County and Municipal Emergency Operations Center that is being evaluated in the Peach Bottom Atomic Power Station Plume

Exercise. The Lead Controller will provide a list of Observers and Liaison Officers to the appropriate Off-Site Response Organizations prior to the day of the exercise. All Observers and Liaison Officers will receive a pre-exercise briefing.

Observers are not intended to be players and should excuse themselves from any active participation in the exercise. If an Observer is engaged in any way by one of the exercise players he/she should refer the player to the Liaison Officer.

PEMA Liaison Officers are players and are assigned specific responsibilities for the exercise. Liaison Officers are instructed to call into the State Emergency Operations Center (SEOC) upon arrival at the exercise venue. They are required to confirm their arrival and provide to the SEOC Watch Officer phone numbers at which they can be reached during the exercise. Liaison Officers are allowed to interact in the exercise as a PEMA representative and are sometimes required to provide injects to facilitate exercise play.

Venue Locations

Addresses to venue locations will be provided by the lead Controller.

Restroom Facilities

Restroom facilities will be available at each venue.

Exercise Identification

Exercise participants will display their existing organizational identification badges.

Communications Plan

Exercise Start, Suspension, and Termination Instructions

The exercise on March 27th, 2012 is scheduled to run for 6 hours or until the Lead Controller after consultation with FEMA and the Utility determine that the exercise objectives have been met. The exercise is scheduled to end by 2200 hours. The Lead Controller will announce the exercise suspension or termination through the State Emergency Operations Center.

All spoken and written communication will start and end with the statement, "THIS IS A DRILL."

Player Communication

Players will use routine, in-place agency communication systems. Additional communication assets may be made available as the exercise progresses. All exercise communication over primary dispatch channels will cease immediately if a real world emergency is announced.

Communications concerning a real world emergency will be preceded by the phrase "This is not a drill". In no instance will exercise communication interfere with real-world emergency communications. Exercise communication over these channels will recommence when authorized by the Exercise Director after he is advised by County 911 that it is safe to do so. Each venue will coordinate its own internal communication networks and channels.

The primary means of communication among the SimCell, Controllers, and the venues will be telephone. A list of key telephone and fax numbers, and radio call signs will be available as a Communication Directory before the start of the exercise.

Player Briefing

Controllers may be required to read specific scenario details to the participants to begin exercise play. They may also have technical handouts or other materials to give to players in order to better orient them to the exercise environment.

Public Affairs

Joint Information Centers will be established at both the Utility Emergency Operations Facility and the Pennsylvania State Emergency Operations Center. Actors will play the role of reporters "public briefings" will be given as they would for a real incident. These "public briefings" will be simulated and not broadcast for the public.

Any participation by the actual media will be coordinated through the Exercise Director in conjunction with the MEMA and PEMA Public Information Office.

CHAPTER 3: PLAYER GUIDELINES

Exercise Staff

Exercise Director

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

Trusted Agents

Trusted agents are exercise planners and participants who are responsible for developing the Scenario and the Master Scenario Events List (MSEL). These documents are restricted and are not available to the rest of the Exercise Planning Team, Players, or other Participants. The trusted agents for the Peach Bottom Atomic Power Station 2012 Plume Exercise can include the Exercise Director, Lead Controller, Representatives from PEMA, MEMA, Bureau of Radiation Protection (BRP), Maryland Department of the Environment (MDE) Exelon Nuclear, and FEMA.

Lead Controller

The Lead Controller also functions as a Trusted Agent. As such he is involved in developing the Master Scenario Events List and is privy to the scenario used at the Utility to generate exercise play. The Lead Controller is responsible for scheduling controllers at the "Out of Sequence" components of the exercise and the Peach Bottom Atomic Power Station 2012 Plume Exercise. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. A Lead Controller will be provided by PEMA for the Commonwealth of Pennsylvania and the Utility for the State of Maryland and will be stationed in the State's EOC during the Plume Exercise.

Controllers

At least one controller will be onsite with every facility and field team participating in the exercise, and at each out-of-sequence interview. The Controller at each location will coordinate any changes that impact the scenario or affect other areas of play through the Lead Controller The individual controllers issue exercise materials to players as required and monitor the exercise timeline. Controllers also provide injects to the players as described in the MSEL. The Trusted Agent from the Utility will act as the Controller at the Utility Site during the Plume exercise and the BRP Trusted Agent will act as Controller for the BRP Field Monitoring Teams.

Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the Peach Bottom Atomic Power Station 2012 Plume Exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Extent of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After Action process. The Lead Evaluator will be the FEMA Region III Site Specialist.

Evaluators

Evaluators work under the direction of the Lead Evaluator, and as a team with Controllers. Evaluators are Subject Matter Experts who record events that take place during the exercise and assess/submit documentation for review and inclusion in the After Action Report (AAR). Evaluators should refrain from any direct interaction with the players during exercise play except with the facilitation of a Controller for clarification of issues or during scheduled interviews.

Player Instructions

Before the Exercise

- Review the appropriate emergency plans, procedures, and exercise support documents.
- Arrive at the exercise location as instructed. Wear appropriate uniform/identification badge.
- If you gain knowledge of the scenario before the exercise, notify a controller so that appropriate actions can be taken to ensure a valid evaluation.
- Read your Player Information Handout, which includes information on exercise safety.
- Please sign in.
- Bureau of Radiation Protection Field Monitoring Teams will be briefed by the BRP Coordinator.

During the Exercise

- Respond to the exercise events and information as if the emergency were real, unless otherwise directed by an exercise controller.
- Controllers will only give you information they are specifically directed to disseminate. You are expected to obtain other necessary information through existing emergency information channels.

- Do not engage in personal conversations with controllers, evaluators, observers, or media personnel while the exercise is in progress. If you are asked an exercise-related question, give a short, concise answer. If you are busy and cannot immediately respond, indicate so, but report back with an answer at the earliest time possible.
- If you do not understand the scope of the exercise or if you are uncertain about an organization's or agency's participation in an exercise, ask a controller.
- Parts of the scenario may seem implausible. Recognize that the exercise has objectives to satisfy and may require the incorporation of unrealistic aspects. Note that every effort has been made by the trusted agents to balance realism with safety and the creation of an effective learning and evaluation environment.
- All exercise communication will begin and end with the phrase "This is a drill". This is a precaution taken so anyone overhearing the conversation will not mistake the exercise play for a real-world emergency.
- When communicating with the SimCell, identify the organization, agency, office, and/or individual with which you want to speak.
- Verbalize out loud when taking an action. This will ensure that evaluators are made aware of critical actions as they occur.
- Maintain a log of your activities. Many times, this log may include documentation of activities missed by a controller or evaluator.

Following the Exercise

- At the end of the exercise at your facility, participate in a debriefing with the controllers and evaluators.
- Provide all rosters, sign in sheets, logs, messages, notes or materials generated from the exercise to your controller or evaluator for review and inclusion in the AAR.
- Bureau of Radiation Protection Field Monitoring Teams will be debriefed immediately following the exercise by the BRP Coordinator.

Simulation Guidelines

Because the Peach Bottom Atomic Power Station Plume Exercise is of limited duration and scope, the physical description of what would fully occur at the incident sites and surrounding areas will be relayed to the Players by Simulators or Controllers.

If a real emergency occurs during the exercise, the exercise at your respective venue may be suspended or terminated at the discretion of the controller(s) at each venue. If a real emergency occurs, provide assistance up to the level of your training, call 911 and use the phrase "This is not a drill" and ask for the appropriate assistance, and notify the nearest Controller and Evaluator.

CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

Exercise Documentation

The goal of the Peach Bottom Atomic Power Station 2012 Plume Exercise is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential nuclear power plant incident. After the exercise, data collected by Controllers, Evaluators, Observers, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

Exercise Evaluation Criteria

FEMA has developed exercise evaluation criteria that identify expected activities for evaluation, providing consistency across exercises, and link individual tasks to disciplines and expected outcomes.

The criteria selected by the Exercise Planning Team are contained in the evaluator materials. These criteria have been selected because the activities they describe can be expected to be observed during the exercise and will guide evaluation to match the exercise design objectives. Supplemental REP evaluation material designed for the exercise may also be used.

DEBRIEFING

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

Exercise Evaluation Hotwash

Controllers, Evaluators, and selected exercise participants will attend a facilitated Controller and Evaluator Hotwash on March 29th at 04:00 p.m. at a location to be determined. During the Hotwash these individuals will discuss their observations of the exercise in an open environment to clarify actions taken during the exercise.

Participants and Public/Media Briefings

The Participants Briefing will be conducted on March 30th at 10:00 a.m. hours followed immediately by the Public/Media Briefing at 11:30 a.m. hours. The Public/Media Briefing will be open to all members of the public. Both briefings will be held at the Homewood Suites in Lancaster, Pennsylvania.

After Action Report

The AAR is the culmination of the exercise. It is a written report outlining the strengths and areas for improvement identified during the exercise. The AAR will include the timeline, executive summary, scenario description, mission outcomes, and capability analysis. The AAR will identify any Deficiencies, Planning Issues, or Areas Requiring Corrective Action that were identified during the exercise and describe recommended actions to correct the issue. The AAR will be drafted by a core group of individuals from the exercise planning team. The draft After Action Report will be released by FEMA to exercise participants for comments and review approximately 30 days after the exercise. The final After Action Report, along with the Improvement Plan, will be released approximately 90 days after the exercise.

After Action Conference and Improvement Plan

The improvement process represents the comprehensive, continuing preparedness effort of which the Peach Bottom Atomic Power Station 2012 Plume Exercise is a part. The lessons learned and recommendations from the AAR will be incorporated into the Improvement Plan (IP).

After Action Conference

The After Action Conference (AAC) is scheduled as part f the Risk Counties Quarterly Coordination Meeting serving as a forum for jurisdiction officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP. The After Action Conference will be held approximately 30 days after the exercise. Participants will receive invitations once the conference has been scheduled.

Improvement Plan

The IP identifies how recommendations will be addressed, including what actions will be taken, who is responsible, and the timeline for completion. It is created by key stakeholders from the Peach Bottom Atomic Power Station 2012 Plume Exercise participating agency officials during the After Action Conference.

APPENDIX A: EXERCISE SCHEDULE

Table A.1 *2012 Peach Bottom Atomic Power Station Plume Exercise Schedule*

Time (Tentative)	Personnel	Activity
02/23/2012		
	Lancaster County /American Red Cross	Mass Care Center Site Walkdown Inspections
03/01/2012		
	York County / American Red Cross	Mass Care Center Site Walkdown Inspections
03/27/2012		
0900-1100	Schools (Harford County)	School District
1600 - 2230	Municipal, County and State EOC'S; Utility; Department of Environmental Protections (DEP) Bureau of radiation Protection (BRP) Field Monitoring Teams	Plume Exercise
03/28/2012		
0900 - 1100	Schools	School District
1000-1200	State Police	Traffic and Access Control Points (Briefing only)
1900-2130	Reception Centers, Mass Care Facilities, Emergency Worker Monitoring/Decontamination Teams	Reception Centers, Mass Care, Emergency Worker Monitoring/Decontamination
03/29/2012		
1530-1730	Exercise Participants	Hotwash
03/30/2012		
1000-1100	Exercise Participants	Participants Briefing
1130-1230	Open to Public	Public/Media Briefing

APPENDIX B: MARYLAND EXTENT OF PLAY

Peach Bottom Atomic Power Station
2012 Plume Pathway Exercise

STATE OF MARYLAND
EXERCISE OBJECTIVES
AND
EXTENT OF PLAY

SECTIONS

INTRODUCTION

EVALUATION SEQUENCE OF EVENTS LIST

EVALUATION AREAS TO BE DEMONSTRATED

JURISDICTIONAL INFORMATION

INTRODUCTION

The purpose of this document is to establish those exercise evaluation areas and corresponding extent of play parameters expected to be demonstrated during the Peach Bottom Atomic Power Station evaluated exercise to be conducted the week of March 26, 2012.

These evaluation areas have been developed through reviews of past exercises, associated plans and procedures, the proposed exercise scenario, applicable Federal Emergency management Agency (FEMA) guidance documents, and extensive discussions with FEMA representatives.

All demonstrations will be conducted in accordance with established plans and procedures, except as noted for specific exercise evaluation areas described herein.

The Maryland Emergency Management Agency (MEMA) and the Maryland Department of the Environment (MDE) were recently evaluated during the Calvert Cliffs Biennial exercise in 2011 and will not be evaluated during the Peach Bottom exercise.

The Harford and Cecil County Emergency Operations Centers will be evaluated in-sequence on March 27, 2012. Out-of-sequence demonstrations will be conducted on March 27, 2012 and March 28, 2012. The out-of-sequence activities to be demonstrated are:

- *Special Facilities – Schools*
- *Reception Center, Monitoring and Decontamination*
- *Emergency Worker, Equipment and Vehicles Monitoring and Decontamination*
- *Congregate Care*

Maryland Emergency Management Agency, Maryland Department of the Environment, Cecil County Emergency Operations Center (EOC) and Harford County Emergency Operations Center will participate from their respective locations with required staffing to support the selected exercise objectives.

Actions will be taken in accordance with each jurisdiction's county emergency plan and procedures unless specified under the specific extent of play.

Date / Time	Harford County	Cecil County
March 27, 2012 1600 - 2300	Harford County EOC Evaluation 1.a.1, 1.c.1, 1.d.1, 1.e.1 2.a.1, 2.b.1, 2.b.2, 2.c.1 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2 5.a.1, 5.a.3, 5.b.1 TCP/ACP: Harford County EOC 1.d.1, 1.e.1 3.a.1, 3.b.1, 3.d.1, 3.d.2 Route Alerting: Harford County EOC 1.d.1, 1.e.1 2.a.1 3.a.1, 3.b.1 5.a.3	Cecil County EOC Evaluation 1.a.1, 1.c.1, 1.d.1, 1.e.1 2.a.1, 2.b.1, 2.b.2, 2.c.1 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2 5.a.1, 5.a.3, 5.b.1 TCP/ACP: Cecil County EOC 1.d.1, 1.e.1 3.a.1, 3.b.1, 3.d.1, 3.d.2 Route Alerting: Cecil County EOC 1.d.1, 1.e.1 2.a.1 3.a.1, 3.b.1 5.a.3
March 27, 2012 0900- 1100	Schools: North Harford Elementary, North Harford Middle, North Harford High 3.c.2	Schools: Conowingo Elementary 3.c.2
March 28, 2012 1700- 2100	Reception Center: Fallston High School 1.e.1 3.a.1 6.a.1, 6.b.1 Congregate Care: Patterson Mill High School 6.c.1 E-Worker Monitoring: Fallston High School	Reception Center: Rising Sun High School 1.e.1 3.a.1 6.a.1, 6.b.1 Congregate Care: Rising Sun High School 6.c.1 E-Worker Monitoring: Perryville High School

	1.e.1 3.a.1 6.a.1, 6.b.1	1.e.1 3.a.1 6.a.1, 6.b.1
April 10, 2012 0900 – 1200	MS-1 Hospital: Upper Chesapeake Medical Center 1.e.1, 3.a.1 Transportation Provider: Whiteford EMS 1.e.1, 6.d.1	
April 11, 2012 0900 – 1200		MS-1 Hospital: Union Hospital 1.e.1, 3.a.1 Transportation Provider: Rising Sun EMS 1.e.1, 6.d.1

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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, A.4, D.3, 4, E.1, 2, H.4)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

EXTENT OF PLAY

Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. Responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. 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. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent of play agreement.

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.

State of Maryland Extent of Play:

During the plume phase exercise activities on March 27, 2012, the emergency workers will pre-stage at various locations to reduce the amount of travel time. MEMA will mobilize only key State agencies at the Maryland EOC. All other facilities will activate according to plans. 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.

The Maryland Department of the Environment field monitoring teams will not pre-stage. The County Agencies involved are Harford County Division of Emergency Operations and Cecil County Emergency Department of Emergency Services.

Union Hospital in Cecil County will not pre-stage its players. However, the Rising Sun EMS staff will pre-stage at the location that will begin the MS-1 portion of the exercise. In all instances, the demonstration of a shift change is **NOT** required. Twenty-four hour staffing will be demonstrated by means of a roster or staffing chart.

All out-of-sequence players and equipment will be pre-positioned (Congregate Care, Reception Centers, Emergency Worker Monitoring and Decontamination Stations and Monitoring and Decontamination Centers).

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.b – Facilities

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have facilities to support the emergency response.

EXTENT OF PLAY

Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).

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

State of Maryland Extent of Play: In accordance with plans

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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, A.1.d., 2.a., b.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to control their overall response to an emergency.

EXTENT OF PLAY

Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for example: keeping the staff informed through periodic briefings and/or other means, coordinating with other appropriate OROs, and ensuring completion of requirements and requests.

All activities associated with direction and control must be performed 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.

State of Maryland Extent of Play: In accordance with plans

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

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 will demonstrate that a primary and at least one backup system are fully functional at the beginning of an exercise. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exists.

The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system.

All activities associated with the management of communications capabilities must be demonstrated 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.

State of Maryland Extent of Play:

This element will be demonstrated during the March 27, 2012 exercise in accordance with plans. Failure of communications equipment will not be provided in the scenario but may be discussed with appropriate personnel.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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. (NUREG-0654, H., J.10.a.b.e.f.j.k., 11, K.3.a.)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

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

EXTENT OF PLAY

Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged.

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked before each use. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the unmodified CDV-700 series or if there are no manufacturer's recommendations for a specific instrument; modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer.). A label indicating such calibration should be on each instrument or verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimetry should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimetry should be inspected for electrical leakage at least annually and replaced, if necessary. CDV-138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be

verified during the exercise, through documentation submitted in the Annual Letter of Certification, and/or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway EPZ.

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

At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

All activities associated with the management of communications capabilities must be demonstrated 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.

State of Maryland Extent of Play: In accordance with plans

KI for the Emergency Workers will be evaluated through inventory sheets and/or inspection. KI will not be removed from the storage locations. KI questions will be addressed through interviews.

KI has been pre-distributed to the general public. However, availability and dissemination of KI for the general population will be demonstrated for the evaluator during this exercise up to the point of actual distribution at the Reception/Monitoring & Decontamination Centers/Congregate Care Centers.

DRD and PRD quantities and calibration dates will be provided to the evaluator(s) upon request. All DRDs (except hospital DRDs) read out in Roentgens.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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 insure 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, K.4.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that an ORO 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 and 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 Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

EXTENT OF PLAY

OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels. As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established protective action guides (PAGs) for KI administration.

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.

State of Maryland Extent of Play: In accordance with plans

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.b. Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (NUREG-0654, I.8., 10., 11. and Supplement 3.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on protective action guides (PAGs) from the ORO's plans and procedures, or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

EXTENT OF PLAY

During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PARs) for decision-makers based on available information and recommendations from the licensee and field monitoring data, if available.

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should 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 appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: In accordance with MDE plans and procedures.

The MDE Decision Maker does not travel to the Exelon Nuclear Coatesville EOF. He/She will report to the MDE or MEMA facility.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.b. Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9., 10.m.)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation and base these choices on protective action guides (PAGs) from the ORO's plans and procedures, FRC Reports Numbers 5 and 7 or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

EXTENT OF PLAY

OROs should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate based on these projections.

If the ORO has determined that KI will be used as a protective measure for the general public under off-site plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement shelter and evacuation protective actions. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be performed 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.

State of Maryland Extent of Play: In accordance with plans.

Maryland counties have the authority to initiate or expand a PAD. If a recommendation is made for the general public to take KI, appropriate information will be provided to the public by the means of notification specified in the plan and/or procedures. The Maryland Department of the Environment will decide whether or not to issue KI to the public based on a calculation to determine if protective thyroid dose (CDE Thyroid) exceeds 5 Rem during a General Emergency. This decision is made at the MDE Accident Assessment Center.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.c - Protective Action Decisions Consideration for the Protection of Special Populations

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9., 10.c.d.e.g.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

EXTENT OF PLAY

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 situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved: In these cases, examples of factors that should be considered are weather conditions, shelter availability, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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 planning criteria. (NUREG-0654, I.8., J.11)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate protective action guides (PAGs), and make timely, appropriate protective action decisions to mitigate exposure from the ingestion pathway.

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

EXTENT OF PLAY

It is expected that the ORO will 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 and procedures. Often such precautionary actions are initiated by the OROs based on criteria related to the facility's emergency action levels (EAL). Such action may include recommendations to place milk animals on stored feed and to use protected water supplies.

The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. During this assessment, OROs should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate

recommendations should be provided to the ORO decision-makers group for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

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

OROs should use Federal resources, as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.

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.

State of Maryland Extent of Play: Not applicable for this evaluation.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.e. – Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return

Criterion 2.e.1: Timely relocation, re-entry, 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, A.1.b., I.10., M)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

The sub-element is derived from NUREG-0654, which provides that OROs have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

EXTENT OF PLAY

Relocation: OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs and control access to evacuated and restricted areas. Decisions are made 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 should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs and field samples of vegetation and soil analyses.

Re-entry: Decisions should be made regarding the 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 non direct-reading dosimeters for emergency workers; questions regarding the individual's objectives and locations expected to be visited and associated time frames; availability of maps and plots of radiation exposure rates; advice on areas to avoid; and procedures for exit including: monitoring of individuals, vehicles, and equipment, decision criteria regarding decontamination; and proper disposition of emergency worker dosimeters and maintenance of emergency worker radiation exposure records.

Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and for other critical functions. They should 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 the farm animals or secure machinery for storage), or to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish polices for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events.

Return: Decisions are to be based 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 that is based on the relocation PAG.

Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the emergency classification level and the relaxation of associated restrictive

measures, basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: **Not applicable for this evaluation.**

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

SUB-ELEMENT 3.A – IMPLEMENTATION OF EMERGENCY WORKER EXPOSURE CONTROL

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and 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. (NUREG-0654, K.3.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; provide for direct-reading dosimeters to be read at appropriate frequencies by emergency workers; maintain a radiation dose record for each emergency worker; and provide for establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

EXTENT OF PLAY

OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimetry chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum

exposure limits (for those emergency workers involved in life saving activities) contained in the OROs plans and procedures.

Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g. written procedures and/or co-workers) 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 and adequate control of exposure can be affected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimeter.

Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

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.

State of Maryland Extent of Play: In accordance with plans and procedures.

At the MDE Accident Assessment Center, dosimetry will be used by the Field Team workers.

At Cecil and Harford Counties, personnel performing route alerting will receive radiological briefings, dosimetry, simulated KI and forms at the County EOC during the March 27, 2012 plume phase activities. Radiological briefings will be provided to address exposure limits and

procedures to replace those approaching limits and how permission to exceed limits is obtained from the county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI will be simulated. Forms should also be demonstrated to emergency workers. Forms used by emergency workers to track dosimetry and KI should be filled out completely and, when appropriate, serial numbers should be entered on forms for dosimetry.

In Harford County and Cecil County, personnel working at evacuee or emergency worker monitoring and decontamination facility will receive dosimetry and forms from their officer in charge while on site. A minimum of six (6) dosimetry kits will be demonstrated for each county. This will be demonstrated out of sequence on March 28, 2012 from 19:00- 21:00. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area.

Cecil County will conduct radiological briefings and distribute KI, dosimeters, and forms at Station 8 in Rising Sun Maryland. A radiological officer will be at Station 8 to carry out these duties and a second officer will be at the EOC to conduct briefings and distribute equipment as necessary as well.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.b – Implementation of KI Decision

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained. (NUREG-0654, E. 7., J. 10. e., f.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or 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 emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option, reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

EXTENT OF PLAY

OROs should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

Emergency workers should demonstrate the basic knowledge of procedures for the use of KI whether or not the scenario drives the use of KI. This can be accomplished by an interview with the evaluator.

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.

State of Maryland Extent of Play: In accordance with plans and procedures.

KI has been pre-distributed to the general public. However, availability and dissemination of KI for the general population will be demonstrated for the evaluator during this exercise up to the point of actual distribution at the Reception/Monitoring & Decontamination Centers/Congregate Care Centers.

KI for the Emergency Workers will be evaluated through inventory sheets and/or inspection. KI will not be removed from the storage locations. KI questions will be addressed through interviews. Simulated KI may be used. The quantity of KI available for Emergency Workers will be made known to evaluators through inspection or inventory sheets.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.c – Implementation of Protective Actions for Special Populations

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG-0654, E.7., J.9., 10.c.d.e.g.)

- **Was this Criterion selected?** YES X NO ____ N/A ____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special populations. Focus is on those special populations that are (or potentially will be) affected by a radiological release from a nuclear power plant.

EXTENT OF PLAY

Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

Contact with special populations and reception facilities may be actual or simulated, as agreed to in the Extent of Play. Some contacts with transportation providers should be actual, as negotiated in the extent of play. All actual and simulated contacts should be logged.

All implementing activities associated with protective actions for special populations 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

The names, locations and contact information of identified individuals with identified special needs are maintained at each County EOC. Copies of these lists will not be provided to the evaluators; however, evaluators will be allowed to inspect the lists during the exercise.

Contact with special populations and reception facilities will be simulated (hospitals, nursing homes and correctional facilities). Actual contacts (up to two per risk county) will be made with transportation providers as per plan. All actual and simulated contacts should be logged.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.c – Implementation of Protective Actions for Special Populations

Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools. (NUREG-0654, J.10.c., d., g.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special populations. Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

EXTENT OF PLAY

Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts, licensed day care centers, and participating private schools within the emergency planning zone of emergency conditions that are expected to or may necessitate protective actions for students.

In accordance with plans and/or procedures, OROs and/or officials of participating public and private schools and licensed day care centers should demonstrate the capability to make and implement prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the EAL at which these recommendations are received, preplanned strategies for protective actions for that EAL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).

Implementation of protective actions should be completed subject to the following provisions: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If 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. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/ principal, transportation director/bus dispatcher),

and at least one bus driver (and the bus driver's escort, if applicable) should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

Officials of the participating school(s) or school system(s) should 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.

All activities must be 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

In Harford and Cecil Counties, the interview of the School Principal will be done at each school. School Students will not be involved during the exercise. Actions and activities associated with the demonstration of Criterion 3.c.2 will be limited to the School District Administration key personnel and the County. Evacuation of students will be conducted through an interview process with School District personnel or the building principal.

The role of the bus driver may be conducted through an interview with school or transportation officials (or designee) if a bus driver is not available. Actual demonstration of the bus route is not required and will not be demonstrated. Maps or route descriptions will be available for illustration purposes. Risk County school plans do not require communications between the school and vehicles. Bus drivers are not considered emergency workers and therefore do not require dosimetry. Potassium Iodide may be available at the school (pre-distributed) for the bus driver.

The School Services Officer is staged at the County EOC and will be coordinating activities with the Principal, including notifications. Private schools and kindergartens will not participate. Lists of these facilities will be provided and procedures for contacting them will be described. Licensed Day Care Facilities will not be contacted but are listed in the County EOC and the following information will be available for each:

- Name of Facility or Operator Name
- Facility Contact Name (if different from Operator Name)
- Facility Address
- Contact Phone Number

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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, J.10.g., j., k.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement protective action plans, 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

OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points consistent with protective action decisions (for example, evacuating, sheltering, and relocation), in a timely manner. OROs should 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 should demonstrate accurate knowledge of their roles and responsibilities. This capability 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 (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.

All activities must be 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

This element will also be evaluated during the March 27, 2012 plume phase activities in Harford and Cecil Counties. Traffic and Access control will be demonstrated by interview at the County EOC. The traffic / access control personnel will not be deployed to the traffic / access control point(s). If the designated assignment is a location within the EPZ, a radiological briefing will be provided to the assigned individuals.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

- **Was this Criterion selected?** YES__X___ NO____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement protective action plans, 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

OROs should 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 should be logged.

All activities must be 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

This element will also be evaluated during the March 27, 2012 plume phase activities in Harford and Cecil Counties. OROs should 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 tow trucks, need not be demonstrated; however, simulated contacts will be logged.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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, J.9., 11.)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway emergency planning zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

EXTENT OF PLAY

Applicable OROs should demonstrate the capability to secure and utilize 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 ingestion pathway EPZ.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: Not evaluated during this exercise

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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, E.5., 7., J.9, 11.)

- **Was this Criterion selected?** YES____ NO_X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway emergency planning zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

EXTENT OF PLAY

Development of measures and strategies for implementation of ingestion pathway zone (IPZ) protective actions should be demonstrated by formulation of protective action information for the general public and food producers and processors. This includes the capability for the rapid reproduction and distribution of appropriate reproduction-ready information and instructions to pre-determined individuals and businesses. OROs should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors. Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. However, actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.

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.

State of Maryland Extent of Play: Not evaluated during this exercise

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.f. – Implementation of Relocation, Re-entry, and Return Decisions

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1., 3.)

- Was this Criterion selected? YES____ NO_X_ N/A____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

EXTENT OF PLAY

Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs. Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the 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 should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.

Re-entry: OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and decontamination facilities will be established as appropriate. Examples of control procedure subjects are: (1) the assignment of, or checking for, direct-reading and non-direct-reading dosimeters for emergency workers; (2) questions regarding the individuals' objectives and locations expected to be visited and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; and procedures for exit, including monitoring of individuals, vehicles, and equipment, decision criteria regarding contamination, proper disposition of emergency worker dosimeters, and maintenance of emergency worker radiation exposure records.

Return: OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize 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.

Communications among OROs for relocation, re-entry, and return may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if 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 and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: Not evaluated during this exercise

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10, I.8., 9., 11.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

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

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.

State of Maryland Extent of Play: In accordance with the MDE procedures.

Maryland Department of the Environment Field Monitoring Teams are not being evaluated during this exercise. Harford and Cecil Counties do not dispatch field teams.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, I.8., 11., J.10.a).

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Responsible OROs should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment. Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.

If the responsibility to obtain peak measurements in the plume has been accepted by license field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local monitoring teams. If the license teams do 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 field teams (licensee, federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated.

OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, etc), if 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: In accordance with the MDE procedures.

MDE Field Monitoring Teams are not being evaluated as part of this exercise.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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, I.8., 9., 11.)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. The methodology, including contamination control, instrumentation, preparation of samples, and a

chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be 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.

State of Maryland Extent of Play: In accordance with the MDE procedures.

Maryland Department of the Environment Field Monitoring Teams are not being evaluated as part of this exercise.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

SUB-ELEMENT 4.B – POST PLUME PHASE FIELD MEASUREMENTS AND SAMPLING

Criterion 4.b.1: The field teams 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, I.8., J.11.)

- **Was this Criterion selected?** YES____ NO_X__ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion emergency planning zone (IPZ) and for relocation, re-entry and return measures.

This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

EXTENT OF PLAY

The ORO field teams should 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 re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.

Ingestion pathway samples should be secured from agricultural products and water. Samples in support of relocation and return should be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be 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.

State of Maryland Extent of Play: Not evaluated during this exercise

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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, C.3., I.8., 9., J.11)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-making.

EXTENT OF PLAY

The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, 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 should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory instrument calibrations should 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 should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g. transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO. The laboratory staff is qualified in radioanalytical techniques and contamination control procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: Not evaluated as part of this exercise

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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 FEMA REP guidance. (10 CFR Part 50, Appendix E & NUREG-0654, E. 1., 4., 5., 6., 7.)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission

(NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

EXTENT OF PLAY

Responsible OROs should 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 pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.

For exercise purposes, timely is defined as "the responsible ORO personnel/ representatives demonstrate actions to disseminate the appropriate information/ instructions with a sense of urgency and without undue delay." If message dissemination is to 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 should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.

The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.

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 Extent of Play: In accordance with State and County plans and procedures.

Procedures for activation of the siren system will be described and simulated to the point of activation. Siren sounding will not occur. Coordination will occur between the State EOCs (MD and PA) and the affected counties with respect to the Alert and Notification System (ANS) process.

Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, ANS activation should be accomplished in a timely manner for primary alerting/notification. This action will not be subject to specific time requirements. All actions to

broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by explanation during an interview.

There are hearing impaired persons in both the Cecil and Harford County Emergency Planning Zones. These persons are identified through an annual survey. These lists are maintained on file at the respective EOC. Each evaluated risk county will demonstrate, by interview, notification of any identified hearing impaired residents within their jurisdiction. Hearing impaired notification teams will not be deployed.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

SUB-ELEMENT 5.A – ACTIVATION OF THE PROMPT ALERT AND NOTIFICATION SYSTEM

Criterion 5.a.2: RESERVED

- **Was this Criterion selected?** YES____ NO____ N/A__X__

INTENT

State of Maryland Extent of Play

None

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

SUB-ELEMENT 5.A – ACTIVATION OF THE PROMPT ALERT AND NOTIFICATION SYSTEM

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E. 6., Appendix 3.B.2.c)

- **Was this Criterion selected?** YES_X__ NO____ N/A____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.) and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

EXTENT OF PLAY

OROs 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 situation. 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 routes 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 (e.g., 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 needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (e.g., 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 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 Extent of Play: In accordance with State and County plans and procedures.

Back-up alert notification of the public, through route alerting due to a simulated siren failure will be demonstrated. An inject will be provided to the county 911 center supervisor, upon confirmation that sirens were sounded, that a particular siren has failed in the area scheduled to demonstrate back-up route alerting. Notice of the siren failure will then be communicated to the appropriate County EOC participant so the 45-minute pre-identified back-up route alert run can be demonstrated. Lights and sirens WILL NOT be used by emergency workers to travel from the staging location to the starting point of the route.

Harford County's staging area is the County EOC. The radiological briefing will occur at this facility and the dispatch of emergency workers to conduct route alerting will occur from the Harford County EOC. The siren that has been selected to fail in Harford County is Siren 65. The Harford County Sheriff's Department will have three Deputies respond to the simulated siren failure and they will complete the entire failed siren footprint in two steps, the first half will be completed and the timer will stop, they will go back to do the second half and the timer begins and ends when the last half is completed.

Cecil County's staging area is the Rising Sun Fire Department. The radiological briefing will occur at this facility and the dispatch of emergency workers to conduct route alerting will occur from the Rising Sun Fire Department. The siren that has been selected to fail in Cecil County is Siren 80. Maryland does not have any "exception areas" in the 10-mile EPZ.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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

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

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to disseminate to the public appropriate emergency information and instructions including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure 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 also

provides that a system be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

EXTENT OF PLAY

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to 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.

The OROs should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should 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 should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or procedures.

If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.

OROs should 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 situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media

briefings and media releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and media releases) and media information kits should be available for dissemination to the media.

OROs should demonstrate that an effective system is in place for dealing with calls to the public inquiry hotline. Hotline staff should 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, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or media releases.

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, unless noted above or otherwise indicated in the extent of play agreement.

State of Maryland Extent of Play: In accordance with State and County plans and procedures.

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner. This will NOT be subject to specific time requirements. Press releases and EAS messages are developed at the State and County Emergency Operations Centers.

The State media briefing is conducted in cooperation with the Exelon Nuclear Joint Information Center briefing. The Risk Counties will provide area for the media to receive a briefing during the March 27, 2012 Maryland plume phase activities. There will be no media actually participating in the briefing. Evaluation of the message provided to the media will be done through interview of the players.

Risk Counties will receive and handle "Public Inquiry" messages via their individual "Public Inquiry" processes (In compliance with NIMS terminology, Rumor Control is now considered to be "Public Inquiry"). Counties will receive approximately ten (10) public inquiry calls from the Exercise cell assigned this responsibility. Counties will be expected to receive and log the calls, identify any trends and take appropriate actions to include follow-up message development, distributions and/or briefings.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

SUB-ELEMENT 6.A – MONITORING AND DECONTAMINATION OF EVACUEES AND EMERGENCY WORKERS, AND REGISTRATION OF EVACUEES

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h.; K.5.b.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.

EXTENT OF PLAY

Radiological monitoring, decontamination, and registration facilities for evacuees/ emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the extent of play agreement. This would include adequate space for evacuees' vehicles. Expected demonstration should include 1/3 of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the 20% emergency planning zone (EPZ) population planning base within about 12 hours. This 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 monitoring procedure. A minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination, and registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators in order to determine whether the twelve-hour requirement can be meet. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should 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 clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

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

The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated. The registration activities demonstrated should include the establishment of a registration record for each individual, consisting of the individual's name, address, results of monitoring, and time of decontamination, if any, or as otherwise designated in the plan. Audio recorders, camcorders, or written records are all acceptable means for registration.

All activities associated with this criterion 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

This element will also be evaluated during the out-of-sequence evaluations on March 28, 2012, from 19:00 – 21:00 in Cecil and Harford Counties.

Radiological monitoring demonstration sites should possess a roster of the monitoring personnel required to process 20% of the population planning base within a 12 hour period. Water from decontamination activities may go directly to a storm drain or other sewer or drain system or area normally designated for wastewater that has been used for bathing or washing of vehicles and or equipment.

In both Counties, the radiological monitoring of the public is co-located with both the reception center and the mass care center. Note: Co-located facilities do not require strip maps or written directions. Other mass care centers could be activated by the County to shelter the public.

Monitoring and Decontamination and Mass Care Centers will be demonstrated during the out-of-sequence window. The counties will provide space at designated mass care centers for operation of monitoring/decontamination centers. Schematics of these monitoring/decontamination centers will be available to show the organization and layout within the facility and space management for monitoring and decontamination. Procedures will be demonstrated to show the separation of contaminated and non-contaminated (clean) individuals to minimize cross contamination.

At the evacuee monitoring/decontamination centers, both portal monitors and hand held meters may be used. Centers using portal monitors will not be required to demonstrate the timing aspect of processing six individuals – three (3) will suffice. Suitable radiological monitoring instruments will be issued to and demonstrated by the initial monitoring team(s). A monitoring team consists of one monitor and one recorder equipped with one survey instrument. Those individuals found to be free of "contamination", based upon scenario injects, will be directed to the mass care registration point for further processing. Note: Actual radiological sources will not be attached to or hidden upon the volunteer evacuees.

One of the simulated evacuees, based upon controller injects, will not be able to be decontaminated. Discussions concerning the processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Showering will be simulated, water will not be used. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used.

At the emergency worker monitoring/decontamination stations, two (2) emergency workers will be monitored. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Showering will be simulated, water will not be used. Suitable radiological monitoring instruments will be issued to the initial monitoring team. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used.

Portal Monitor Use: Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated evacuees and/or emergency workers. The monitoring/decontamination team requirements will be based on the portal monitor capabilities as applicable based on the procedure/guidelines, and the recommendations of the manufacturer.

Radiation readings/contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pad (if used). Positioning of a fire apparatus on-site may be simulated if otherwise required. Note: Re-demonstrations may be performed as appropriate and time permitting.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

SUB-ELEMENT 6.B – MONITORING AND DECONTAMINATION OF EMERGENCY WORKER EQUIPMENT

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG-0654, K.5.b)

- **Was this Criterion selected?** YES X NO ____ N/A ____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

EXTENT OF PLAY

The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the ORO's plans and procedures. Specific attention should be given to equipment, including vehicles, that was in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment including vehicles based on guidance levels and procedures stated in the plan and/or procedures.

The area to be used for monitoring and decontamination should 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 should 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 air intake systems, radiator grills, bumpers, wheel wells, tires, and door handles should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.

Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, may be simulated and conducted by interview.

All activities associated with this criterion 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

This element will also be evaluated during the out-of-sequence evaluations on March 28, 2012, from 19:00 – 21:00 in Cecil and Harford Counties.

Emergency worker station personnel will consist of a minimum of one monitor and one recorder and sufficient personnel to demonstrate monitoring of at least one vehicle. Schematics of these monitoring/decontamination stations will be available to show organization and space management within and the exterior of the facility. This schematic will show how contamination control measures will be utilized. An explanation of the decontamination procedures will be explained after the vehicle which has simulated contamination has been monitored. One radiological survey meter will be issued to each monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package and injected by a controller. Set-up of the facility will be performed as closely as possible to that for an actual emergency with all route markings in place including clearly defined exit areas, per contamination control procedures and/or step-off pads (if used).

Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, will be simulated and conducted by interview. Note: Re-demonstrations may be performed as appropriate and time permitting.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.c - Temporary Care of Evacuees

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines (found in MASS CARE-Preparedness Operations, ARC 3031). Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h., 12.)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross under existing letters of agreement.

EXTENT OF PLAY

Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with ARC 3031. In this simulation, it is not necessary to set up operations, as they would be in an actual emergency. Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between demonstration and simulation of this criterion, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

Congregate care staff should also demonstrate the capability to ensure that evacuees have been monitored for contamination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.

If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility(ies). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.

All activities associated with this criterion 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.

State of Maryland Extent of Play: In accordance with plans and procedures.

Actual set-up of facilities will not be demonstrated. Operation of the center will be explained to the evaluator. This element will also be evaluated during the out-of-sequence evaluations on March 28, 2012 from 19:00 to 21:00 in Cecil and Harford Counties.

Counties demonstrating the operation of mass care centers during the out-of-sequence window will provide floor plans of the mass care centers to show organization within the facility and space management during a real emergency.

Schematics of these mass care centers will be available, during the demonstration window, to show organization within the facility and space allocation for the registration and sheltering the evacuating public. Necessary signs, directional arrows and forms will be available and used to demonstrate registration, at a minimum, of three evacuees requiring emergency housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.d - Transportation and Treatment of Contaminated Injured Individuals

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2, H.10., K.5.a.b., L.1., 4.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

EXTENT OF PLAY

Monitoring, decontamination, and contamination control efforts will not delay urgent medical care for the simulated victim.

OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service, any vehicle (e.g., car, truck, or ambulance) may be utilized to transport a simulated victim to the medical facility. Normal communications between the ambulance/ dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur prior to releasing the ambulance from the drill. This would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the simulated victim may be performed prior to transport, done en-route, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

All activities associated with this criterion 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.

State of Maryland Extent of Play: Not evaluated as part of the Plume Pathway exercise.

Location of Key Exercise Facilities:

LOCATION OF KEY EXERCISE FACILITIES		
LOCATION	AGENCY/ FACILITY	ADDRESS
Utility	PBAPS Emergency Operations Facility and Joint Public Information Center	175 North Caln Road Coatesville, Pennsylvania 19320
State	Maryland Emergency Management Agency Emergency Operations center (EOC)	Camp Frettered Military Reservation 5401 Rue Saint Lo Drive Reisterstown, Maryland 21136
	Maryland Department of the Environment, Department of Environment Emergency Response Division	1800 Washington Boulevard, Suite 105 Baltimore, Maryland 21230
Cecil County	Cecil County Department of Emergency Services	107 Chesapeake Boulevard Elkton, Maryland 21921
	Rising Sun High School	100 Tiger Drive Northeast, MD 21901
	Perryville High School	1696 Perryville Road Perryville, Maryland 21903
Harford County	Harford County Division of Emergency Operations	2220 Ady Road Forest Hill, Maryland 21050
	Fallston High School	2301 Carrs Mill Road Fallston, MD 21047
	Patterson Mill High School	85 Patterson Mill Road Bel Air, MD 21015

ATTACHMENT B: PENNSYLVANIA EXTENT OF PLAY

Peach Bottom Atomic Power Station
2012 Plume Pathway Exercise

PEMA 911
PENNSYLVANIA EMERGENCY MANAGEMENT AGENCY

COMMONWEALTH OF PENNSYLVANIA
EXERCISE OBJECTIVES
AND
EXTENT OF PLAY

METHOD OF OPERATION

1. Peach Bottom Atomic Power Station (PBAPS)

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

2. Bureau of Radiation Protection (BRP)

Personnel will be present at the State Emergency Operations Center (EOC), the nuclear facility Emergency Operations Facility (EOF), Technical Support Center (TSC) and field locations; Bureau of Radiation Protection, Field Monitoring and Sampling Teams will not be evaluated.

3. PEMA Operations at State EOC

This "Method of Operation" Document includes activities for the Full-Scale Plume Exercise (March 27, 2012), and the "Out of Sequence" Activities (March 27-28, 2012).

A. Plume Exercise – March 27, 2012

PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel from the Fire Commissioner's Office, the Bureau of Administration, Technical Services, Plans, plus Emergency Preparedness Liaison Officers (EPLOs) with accompanying response team members from designated state departments/agencies will comprise initial operations at the State Emergency Operations Center (EOC). The State EOC will be evaluated during this exercise.

B. Plume Exercise – "Out of Sequence" Activities – March 28, 2012.

PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel will disseminate exercise related messages to the participating Counties for dissemination to the participating School Districts during the morning of March 28, 2012. The State Emergency Operations Center (EOC) and County EOCs will NOT be evaluated during the "Out of Sequence" component. PEMA personnel will serve as "observers" at the identified School Districts.

The Pennsylvania State Police (PSP) demonstration will take place at PSP York Barracks, located at the Loganville Exit on I-83, York County. The PSP briefing will be performed out of sequence in a demonstration window of 10:00 a.m. to 12:00 a.m. on March 28, 2012.

PEMA personnel will serve as "Observers" at the various field exercise locations during the evening "Out-of-Sequence" component March 28, 2012 at 7:00 p.m. – 9:30 p.m. An exercise coordinator will remain in the State EOC. The State Emergency Operations Center (EOC) and Counties will not be evaluated during the evening "Out of Sequence" component.

4. PEMA Area Office Operations

The PEMA Area Offices (Harrisburg-Central Area and Hamburg-Eastern Area) will not be activated nor evaluated during this exercise. Selected staff of the Area Offices will serve as Liaison Officers to Risk Counties as assigned. Liaison Officers are exercise participants.

5. Counties Designated to Participate

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

6. PEMA Liaison Officers

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

7. Controllers

A lead controller will be present in the State EOC. A controller will be present at each of the emergency worker monitoring/decontaminating stations and centers that are scheduled for evaluation on the evening of March 28, 2012 at 7:00 p.m. – 9:30 p.m. Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate, regarding radiological readings during the monitoring of personnel. Live radioactive sources will not be used. Exception: individuals tasked with the setup of portal monitoring equipment (if used) will use a

standard 1 micro curie Cesium 137 source for the purpose of conducting operational tests. Additionally, appropriate test sources will be available and used to verify the operation of the monitoring / survey instruments per manufacturers' recommendations.

March 28, 2012 schools demonstration: PEMA EOC will provide exercise inject messages to support the schools exercise via the counties.

8. PEMA Observers

PEMA staff, qualified county emergency management personnel, and/or nuclear power plant personnel will be assigned, if required, to key locations for the purpose of observing, noting response actions and conditions, and recording observations for future use. Observers will not take an active part in the proceedings, but will interact with staff members to the extent necessary to fulfill their observer responsibilities. Coaching of players by observers is not permitted except to provide training to participants awaiting a re-demonstration. (Refer to paragraph 13)

9. FEMA Evaluators

Federal evaluators will be present at the risk and support county EOCs and identified risk municipal EOCs, and at appropriate field locations to evaluate player response to the actual and simulated events in the exercise scenario. FEMA will evaluate one-third of the risk municipalities in Chester, Lancaster and York Counties.

Plume Phase Exercise (March 27, 2012): Federal evaluators will be present at the identified risk and support county EOC's to evaluate player response to the actual and simulated events in the exercise scenario. Additionally, one-third of the risk municipalities will be federally evaluated.

Out of Sequence A.M. Period (March 28, 2012): Federal evaluators will be present at the identified "out-of-sequence" demonstration sites per Attachment A, Section I.B.1. These include the identified Public School Districts.

Out of Sequence A.M. Period (March 28, 2012): The Pennsylvania State Police (PSP) demonstration will take place at PSP York Barracks, located at the Loganville Exit on I-83, York County. The PSP briefing will be performed out of sequence in a demonstration window of 10:00 a.m. to 12:00 a.m. on March 28, 2012.

Out of Sequence P.M. Period (March 28, 2012): Federal evaluators will be present for demonstrations conducted at Reception Centers, Mass Care Centers, and Monitoring/Decontamination Centers (for the public) and Stations (for Emergency Workers) as identified in Attachment A, Sections I.B.3, I.B.4 and I.B.5. Note: 9 Mass Care Center locations (as indicated) will receive a federally evaluated walk-down on

February 23, 2012 in Lancaster County and March 1, 2012 in York County. Additionally, Mass Care Monitoring and Decontamination Centers are either co-located with Reception Centers or Mass Care Centers as indicated in Attachment A.

10. Demonstration Windows

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

The "demonstration windows" for this exercise are:

A. Plume Phase Exercise

The out-of-sequence MS-1 hospital demonstration was federally evaluated at Brandywine Hospital, Chester County on October 28, 2011.

County and municipal EOC operations will be conducted on March 27, 2012. (Please refer to the Extent of Play Demonstration Tables, Attachment A, Sections I.A.1 and I.A.2).

The out-of-sequence exercise window for school demonstrations will be from 9:00 – 11:00 a.m. on March 28, 2012.

The out-of-sequence interview of Pennsylvania State Police traffic control / access control points will be from 10:00 a.m. - 12:00 noon. March 28, 2012.

The out-of sequence demonstrations for Reception Centers, Mass Care Centers, and Monitoring/Decontamination Centers (for the public) and Stations (for Emergency Workers) will be conducted from 7:00 – 9:30 p.m. on March 28, 2012 per Attachment A, Sections I.B.3, I.B.4 and I.B.5.

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

B. Post Plume Exercise

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

11. Stand-down

All jurisdictions will request approval on a jurisdiction by jurisdiction basis prior to stand-down.

A. Upon completion of all requirements and after having informed the FEMA evaluator that all evaluation areas have been demonstrated and/or completed, the risk municipality EOCs may request approval from their county EOC to stand-down their portion of the exercise.

B. The risk county EOC will remain operational until the exercise is officially terminated by the State Lead Controller. The State EOC will issue an Exercise Termination Message.

12. General Concepts

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

13. Re-demonstrations

Any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise, provided it does not negatively interfere with the exercise. Refresher training may be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators. PEMA may advise the RAC Chair prior to initiating any re-demonstrations. It is permissible to extend the demonstration window, within reason, to accommodate the re-demonstration. Activities corrected from a re-demonstration will be so noted.

EXTENT OF PLAY AGREEMENT

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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, A.4; D.3, 4; E.1, 2; H.4)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

EXTENT OF PLAY

Responsible OROs should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. Responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel 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. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent of play agreement.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Pre-positioning of state emergency personnel (Liaison Officers) at the Emergency Operations Facility (EOF), the Utility Joint Information Center (JIC) and at Risk Counties is appropriate due to the commuting distance from the individual's duty location or residence. Risk counties may pre-position EOC staff; call-out procedures will be conducted through interviews. Risk municipalities will conduct call-outs to demonstrate the mobilization of key personnel.

- Actual calls (or pager notifications) will be made to the municipal EOC personnel for the Plume Phase exercise per plans and procedures.

- In all instances, the demonstration of a shift change is **NOT** required. Twenty-four hour staffing will be demonstrated by means of a roster or staffing chart.
- All out-of-sequence players and equipment will be pre-positioned (School District personnel, Pennsylvania State Police ACP, Reception Centers, Emergency Worker Monitoring and Decontamination Stations and Monitoring and Decontamination Centers).
- Individuals working in state facilities and county EOCs may be pre-positioned for the plume phase.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.b – Facilities

Criterion 1.b.1: Facilities are sufficient to support the emergency response. (NUREG-0654, H.3)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have facilities to support the emergency response.

EXTENT OF PLAY

Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations).

Facilities must be set up based on the ORO's plans and procedures and demonstrated, as they would be used in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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, A.1.d; A.2.a, b)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to control their overall response to an emergency.

EXTENT OF PLAY

Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for example: keeping the staff informed through periodic briefings and/or other means, coordinating with other appropriate OROs, and ensuring completion of requirements and requests.

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

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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 Offsite Response Organizations (ORO) 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 will demonstrate that a primary and at least one backup system are fully functional at the beginning of an exercise. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exists. The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system, as negotiated in the extent of play agreement.

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

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Risk Counties will communicate with the State EOC via SEVAN (primary) and e-mail (secondary.) PASTAR, State 800 MHz Radio System, and commercial telephone are available for back-up. The State EOC may communicate with the utility and the risk counties via dedicated telephone circuits, commercial "dial-up" lines, or other available means.

Risk Counties will communicate with their risk municipalities via public safety radio frequencies (EMA Radio), Commercial Telephone, Fax, or Amateur Radio Communications (ARES / RACES) or other available means.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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. (NUREG-0654, H.7,10; J.10.a, b, e, J.11; K.3.a)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have emergency equipment and supplies adequate to support the emergency response.

EXTENT OF PLAY

Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged.

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked before each use. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the unmodified CDV-700 series or if there are no manufacturer's recommendations for a specific instrument; modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer.). A label indicating such calibration should be on each instrument or verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.

Sufficient quantities of appropriate direct-reading and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimetry should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.

Dosimetry should be inspected for electrical leakage at least annually and replaced, if necessary. CDV-138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, and/or through a staff assistance visit.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway EPZ.

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a

Staff Assistance Visit. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, the ORO may produce a letter from a certified private or State laboratory indicating that the KI supply remains potent, in accordance with U.S. Pharmacopoeia standards.

At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Support county functions outside of the EPZ do not have DRDs, or KI, but those responsible for reception centers and/or monitoring and decontamination centers will have PRDs.

Evaluation of KI quantities will be verified using inventory sheets. KI will not be removed from storage locations and boxes/packages will not be opened. KI questions will be addressed through interviews. Leakage testing verification of DRDs will be available to the evaluator.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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, K.4, J.10. e, f)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) 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 and 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 Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

EXTENT OF PLAY

OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels.

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established Protective Action Guides (PAGs) for KI administration.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.b. - Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.1: Appropriate protective action recommendations 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, I.8, 10 and Supplement 3)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter,

weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

EXTENT OF PLAY

During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PARs) for decision-makers based on available information and recommendations from the licensee and field monitoring data, if available.

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should 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 appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.b. Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency

Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PAD) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9, 10.f,m)

EXTENT OF PLAY

OROs should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate based on these projections.

If the ORO has determined that KI will be used as a protective measure for the general public under off-site plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement shelter and evacuation protective actions. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process should involve close coordination with appropriate assessment and decision-making staff.

If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions.

All decision-making activities by ORO personnel must be performed 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.c - Protective Action Decisions Consideration for the Protection of Special Populations

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9, J.10.d,e)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to determine protective action recommendations,

including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, and transportation dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

EXTENT OF PLAY

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 situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved: In these cases, examples of factors that should be considered are weather conditions, shelter availability, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations were an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

Applicable OROs should 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. Contacts with public school systems/districts must be actual.

In accordance with plans and/or procedures, OROs and/or officials of public school systems/districts should demonstrate the capability to make prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (that is, either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (for example, whether the students are still at home, en route to the school, or at the school).

All decision-making activities associated with protective actions, including consideration of available resources, for special population groups 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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

This sub-element will not be evaluated during this exercise.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.e. – Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return

This sub-element will not be evaluated during this exercise.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

SUB-ELEMENT 3.A – Implementation of Emergency Worker Exposure Control

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and 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. (NUREG-0654, K.3.a,b)

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimetry and permanent record dosimetry; the reading of direct-reading dosimetry by emergency workers at appropriate frequencies; maintaining a radiation dose record for each emergency worker; and establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

EXTENT OF PLAY

OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimeter chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the ORO's plans and procedures.

Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.

During a plume phase exercise, emergency workers should demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached. The emergency

worker should report accumulated exposures during the exercise as indicated in the plans and procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require emergency workers to seek authorizations for additional exposure, evaluators should interview at least two emergency workers, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. Emergency workers may use any available resources (e.g., written procedures and/or co-workers) 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 and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry.

Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Radiological briefings will be provided to address exposure limits and procedures to replace those approaching limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI will be simulated. A maximum of six (6) Dosimetry-KI report forms will be demonstrated.

OROs should also demonstrate the use of forms to emergency workers. At any time, players may ask other players or supervisors to clarify radiological information. In Pennsylvania, emergency workers outside of the EPZ do not have turnback values.

Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. In Pennsylvania this will be accomplished through the use of an area kit. In

Pennsylvania this will be accomplished through the use of an area kit. The area kit process is explained in State, County and Municipal Plans.

Standard issue of dosimetry and potassium iodide for each category of emergency worker is as follows:

- Category A: 1 PRD, 1 DRD, and 1 unit of KI
- Category B: 1 PRD and 1 unit of KI
- Category C: 1 PRD

All locations that have dosimetry equipment indicated within their Radiological Emergency Response Plan (RERP), will make the dosimetry equipment (and KI) available for inspection by the Federal Evaluator. Simulation PRDs with mock serial numbers will be used.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.b – Implementation of KI Decision

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained. (NUREG-0654, J. 10. e)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or 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 emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option and is reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

EXTENT OF PLAY

Offsite Response Organizations (ORO) should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals

who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

Emergency workers should demonstrate the basic knowledge of procedures for the use of KI whether or not the scenario drives the use of KI. This can be accomplished through an interview by the evaluator.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Within Pennsylvania, the Pennsylvania Department of Health is responsible for distribution of KI to the general public located within the EPZ. Pre-distribution is accomplished on an annual basis. KI is not distributed to the general public at the time of an emergency.

Evaluation of emergency worker KI quantities will be verified using inventory sheets. KI will not be removed from storage locations and boxes will not be opened. KI questions will be addressed through interviews.

Personnel assigned to operate Monitoring/Decontamination centers and stations are not issued DRDs or KI since the centers/stations are located outside the EPZ. Each will be issued a simulated PRD with mock serial numbers. For purposes of demonstration, a maximum of six PRDs will be issued.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.c – Implementation of Protective Actions for Special Populations

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG-0654, J.10.c,d,g)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to implement protective action decisions,

including evacuation and/or sheltering, for all special populations. Focus is on those special populations that are (or potentially will be) affected by a radiological release from a nuclear power plant.

EXTENT OF PLAY

Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc.). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

Contact with special populations and reception facilities may be actual or simulated, as agreed to in the Extent of Play. Some contacts with transportation providers should be actual, as negotiated in the extent of play. All actual and simulated contacts should be logged.

All implementing activities associated with protective actions for special populations 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

The names, locations and contact information of identified individuals with identified special needs are maintained on a list at their respective municipal EOC (based upon residential jurisdiction). Copies of these lists will not be provided to the evaluators; however, evaluators will be allowed to inspect the lists during the exercise.

Initial contact with special populations and reception facilities will be actual (hospitals, nursing homes and correctional facilities). All subsequent calls will be simulated. Actual contacts (up to two per risk county) will be made with transportation providers as per plan. All actual and simulated contacts should be logged.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.c – Implementation of Protective Actions for Special Populations

Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools. (NUREG-0654, J.10.c, d, g)

EXTENT OF PLAY

Public school systems/districts shall demonstrate the ability to implement protective action decisions for students. The demonstration shall be made as follows: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If 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.

If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver (and the bus driver's escort, if applicable) should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

Officials of the school system(s) should 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 day care centers that participate in REP exercises pursuant to the ORO's plans and procedures as negotiated in the Extent of Play Agreement.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

School Students will not be involved during the exercise. Actions and activities associated with the demonstration of Criterion 3.c.2 will be limited to the School District Administration key personnel and the County. Evacuation of students will be conducted through an interview process with School District personnel or the building principal.

The role of the bus driver may be conducted through an interview with school or transportation officials (or designee) if a bus driver is not available. Actual demonstration of the bus route is not required and will not be demonstrated. Maps or route descriptions will be available for illustration purposes. Risk County school plans do not require communications between the

school and vehicles. Bus drivers are not considered emergency workers and therefore do not require dosimetry.

Private schools, private kindergartens, and day care centers do not participate in REP exercises. However, OROs will be prepared to show evaluators lists of these facilities that they would contact in the event of an emergency in accordance with plans and procedures. Any simulated contacts should be logged.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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, J.10.g, j)

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement protective action plans, 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

OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points, consistent with protective action decisions (for example, evacuating, sheltering, and relocation), in a timely manner. OROs should 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 should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview, in accordance with the extent of play.

In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Municipal Traffic and Access control will be demonstrated by interview at the applicable jurisdiction (including the State Police). The traffic / access control personnel will not be deployed to the traffic / access control point(s). If the designated assignment is a location within the EPZ, a radiological briefing will be provided to the assigned individuals.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

EXTENT OF PLAY

OROs should 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, should be logged.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

ORO's should 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 tow trucks, need not be demonstrated; however, simulated contacts will be logged.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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, J.9., 11.)

- **Was this Criterion selected?** YES____ NO__X__ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway emergency planning zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

EXTENT OF PLAY

Applicable OROs should demonstrate the capability to secure and utilize 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 ingestion pathway EPZ.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Play: Not evaluated during this exercise

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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, E.5., 7., J.9, 11.)

- **Was this Criterion selected?** YES____ NO_X_ N/A____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway emergency planning zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

EXTENT OF PLAY

Development of measures and strategies for implementation of ingestion pathway zone (IPZ) protective actions should be demonstrated by formulation of protective action information for the general public and food producers and processors. This includes the capability for the rapid reproduction and distribution of appropriate reproduction-ready information and instructions to pre-determined individuals and businesses. OROs should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors. Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. However, actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.

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.

PEMA Negotiated Extent of Play: Not evaluated during this exercise

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.f. – Implementation of Relocation, Re-entry, and Return Decisions

Criterion 3.f.1: Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented. (NUREG-0654, M.1., 3.)

- Was this Criterion selected? YES____ NO_X__ N/A____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

EXTENT OF PLAY

Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs.

Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the 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 should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.

Re-entry: OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and decontamination facilities will be established as appropriate.

Examples of control procedure subjects are: (1) the assignment of, or checking for, direct-reading and non-direct-reading dosimeters for emergency workers; (2) questions regarding the individuals' objectives and locations expected to be visited and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; and procedures for exit, including monitoring of individuals, vehicles, and equipment, decision criteria regarding contamination, proper

disposition of emergency worker dosimeters, and maintenance of emergency worker radiation exposure records.

Return: OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize 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.

Communications among OROs for relocation, re-entry, and return may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if 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 and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Play: Not evaluated during this exercise

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10, I.8., 9., 11.)

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

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

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.

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

Department of Environmental Protection (DEP, Bureau of Radiation Protection (BRP) field teams are equipped with the necessary instrumentation and supplies. Federal observers may meet with the field teams at the DEP South Central Office a 3:00 p.m. on March 27, 2012 to observe instrument checks and equipment inventory verification.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

Criterion 4.a.2: Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure. (NUREG-0654, I.8., 11., J.10.a).

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Responsible OROs should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment. Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts.

If the responsibility to obtain peak measurements in the plume has been accepted by license field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local monitoring teams. If the license teams do 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 field teams (licensee, federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated.

OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, etc), if 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

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

Field Team Control will be performed within or near the 10 mile EPZ using the DEP Radiological Rapid Response Vehicle (R3V). Field Team control is expected to initially be out of sequence with the plume timeline. During the exercise the field teams will be directed to take measurements in locations to provide information sufficient to characterize the plume and impacts. In addition to field team measurements, remote detectors will be located by the field teams near the expected plume pathway, these detectors will automatically transmit data to the R3V. These detectors will be used to keep field team dose ALARA.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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, I.8., 9., 11.)

- **Was this Criterion selected?** YES____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. The methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be 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.

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

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

SUB-ELEMENT 4.B – POST PLUME PHASE FIELD MEASUREMENTS AND SAMPLING

Criterion 4.b.1: The field teams 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, I.8., J.11.)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion emergency planning zone (IPZ) and for relocation, re-entry and return measures.

This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

EXTENT OF PLAY

The ORO field teams should 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 re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.

Ingestion pathway samples should be secured from agricultural products and water. Samples in support of relocation and return should be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

All activities must be 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.

PEMA Negotiated Extent of Plan: This sub-element will not be evaluated during this exercise.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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, C.3., I.8., 9., J.11)

- **Was this Criterion selected?** YES_____ NO__X___ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-making.

EXTENT OF PLAY

The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, 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 should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory instrument calibrations should 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 should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g. transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO. The laboratory staff is qualified in radioanalytical techniques and contamination control procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if 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 and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Plan: This sub-element will not be evaluated during this exercise.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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 FEMA REP guidance. (10 CFR Part 50, Appendix E & NUREG-0654, E. 1., 4., 5., 6., 7.)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

EXTENT OF PLAY

Responsible OROs should 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 pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.

For exercise purposes; timely is defined as "the responsible ORO personnel/ representatives demonstrate actions to disseminate the appropriate information/ instructions with a sense of urgency and without undue delay." If message dissemination is to 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 should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.

The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.

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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

The Commonwealth of Pennsylvania has implemented a Statewide EAS Control system in cooperation with the Pennsylvania Association of Broadcasters per the State Emergency Communications Committee and Pennsylvania Emergency Alert System State EAS Plan (April 1, 2004). The State EOC (PEMA) is the initiating point for the activation of the EAS. Risk

Counties have the control equipment for activation of sirens. Coordination will occur between the State EOC and the affected counties with respect to the Alert and Notification System (ANS) process. Sirens will be coordinated and the sounding simulated at the appropriate time with the simulated activation of EAS taking place approximately 3 minutes following the simulated activation of the sirens. Regular Broadcasting will not be interrupted on the EAS Stations. Broadcast of the message(s) or test message(s) is NOT required and NOT requested. Counties may elect to simulate county specific supplemental messages to their electronic local media.

Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, ANS activation should be accomplished in a timely manner for primary alerting/notification. This action will NOT be subject to specific time requirements.

All actions to broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by explanation during an interview.

Each evaluated municipality per risk county will demonstrate, by interview, route alerting of any identified hearing impaired residents within their jurisdiction. Hearing impaired notification teams will NOT be deployed.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

SUB-ELEMENT 5.A – ACTIVATION OF THE PROMPT ALERT AND NOTIFICATION SYSTEM

Criterion 5.a.2: RESERVED

- **Was this Criterion selected?** YES____ NO____ N/A__X__

INTENT

PEMA Negotiated Extent of Play: None

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

SUB-ELEMENT 5.A – ACTIVATION OF THE PROMPT ALERT AND NOTIFICATION SYSTEM

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E. 6., Appendix 3.B.2.c)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission (NRC) regulations (10 CFR Part 50, Appendix E.IV.D.) and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

EXTENT OF PLAY

OROs 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 situation. 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 routes 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 (e.g., 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 needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (e.g., 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 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Back-up alert notification of the public due to a simulated siren failure will be demonstrated (Refer to Attachment A, Section I.A.3). County liaisons will give a siren failure inject to the county siren dispatcher, upon confirmation that sirens were sounded, that a particular siren has failed in the municipalities scheduled to demonstrate back-up route alerting. Notice of the siren failure will then be communicated to the appropriate municipalities/locations so they can demonstrate their 45-minute pre-identified back-up route alert run as per Attachment A, Section I.A.3. Pennsylvania does not have any "exception areas." The 45-minute clock starts at the point of notification that a siren has failed.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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

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

- **Was this Criterion selected?** YES__X__ NO____ N/A____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to disseminate to the public appropriate emergency information and instructions including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure 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 also provides that a system be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

EXTENT OF PLAY

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to 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.

The OROs should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should 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 should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

OROs should demonstrate the capability to develop emergency information in a non-English language when required by the plan and/or procedures.

If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures.

OROs should 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 situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and media releases should be consistent with protective action decisions and other emergency information provided to the public. Copies of pertinent emergency information (e.g., EAS messages and media releases) and media information kits should be available for dissemination to the media.

OROs should demonstrate that an effective system is in place for dealing with calls to the public inquiry hotline. Hotline staff should 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, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or media releases.

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, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner. This will NOT be subject to specific time requirements. One media briefing will be demonstrated in each risk county.

Risk Counties will receive and handle "Public Inquiry" messages via their individual "Public Inquiry" processes (In compliance with NIMS terminology, Rumor Control is now considered to be "Public Inquiry"). Counties will receive approximately ten (10) public inquiry calls from the State Exercise cell assigned this responsibility. Counties will be expected to receive and log the calls, identify any trends and take appropriate actions to include follow-up message development, distributions and/or briefings.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

SUB-ELEMENT 6.A – MONITORING AND DECONTAMINATION OF EVACUEES AND EMERGENCY WORKERS, AND REGISTRATION OF EVACUEES

Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h.; K.5.b.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.

EXTENT OF PLAY

Radiological monitoring, decontamination, and registration facilities for evacuees/emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the extent of play agreement. This would include adequate space for evacuees' vehicles. Expected demonstration should include 1/3 of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours. Prior to

using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the 20% emergency planning zone (EPZ) population planning base within about 12 hours. This 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 monitoring procedure. A minimum of six individuals per monitoring station should be monitored, using equipment and procedures specified in the plan and/or procedures, to allow demonstration of monitoring, decontamination, and registration capabilities. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators in order to determine whether the twelve-hour requirement can be meet. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should 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 clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

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

The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated. The registration activities demonstrated should include the establishment of a registration record for each individual, consisting of the individual's name, address, results of monitoring, and time of decontamination, if any, or as otherwise designated in the plan. Audio recorders, camcorders, or written records are all acceptable means for registration.

All activities associated with this criterion 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Radiological monitoring demonstration sites should possess a roster of the monitoring personnel required to process 20% of the population allocated to the facility within a 12 hour period.

Water from decontamination activities may go directly to a storm drain or other sewer or drain system or area normally designated for wastewater that has been used for bathing or washing of vehicles and or equipment. Radiological monitoring of the public may be co-located at either reception centers or mass care centers depending on the county plan.

At each Reception Center (stand alone – non-monitoring/decontamination activity sites) a minimum of three volunteer evacuees will be processed, briefed, issued the appropriate strip map or directions, and instructed to proceed to a mass care center designated for demonstration of monitoring, decontamination, and registration. A sample of the appropriate strip maps or directions will be made available for the demonstration. Note: Co-located facilities do not require strip maps or written directions.

Mass care centers and mass care monitoring/decontamination centers will be demonstrated per Attachment A during the out-of-sequence window. The counties will provide space at designated mass care centers for operation of monitoring/decontamination centers. Schematics of these monitoring/decontamination centers will be available to show the organization and layout within the facility and space management for monitoring and decontamination. Procedures will be demonstrated to show the separation of contaminated and non-contaminated (clean) individuals to minimize cross contamination.

At the evacuee monitoring/decontamination centers (if using hand-held meters), a minimum of six (6) volunteer evacuees will be monitored (or one volunteer evacuee may be monitored six times). Centers using portal monitors will not be required to demonstrate the timing aspect of processing six individuals – three (3) will suffice. Suitable radiological monitoring instruments will be issued to and demonstrated by the initial monitoring team(s). A monitoring team consists of one monitor and one recorder equipped with one survey instrument. Those individuals found to be free of "contamination", based upon scenario injects, will be directed to the mass care registration point for further processing. Note: Actual radiological sources will not be attached to or hidden upon the volunteer evacuees.

One of the simulated evacuees, based upon controller injects, will not be able to be decontaminated. Discussions concerning the processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Showering will be simulated, water will not be used. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used.

At the emergency worker monitoring/decontamination stations, two (2) emergency workers will be monitored. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Showering will be simulated, water will not be used. Suitable radiological monitoring instruments will be issued to the initial monitoring team. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used.

Portal Monitor Use: Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated evacuees and/or emergency workers. The monitoring/decontamination team requirements will be based on the portal monitor capabilities as applicable based on the procedure/guidelines, and the recommendations of the manufacturer. Note: PEMA Interim Annex E letter, April 2009 or superseding document shall apply.

Monitoring/decontamination centers and Emergency Worker monitoring and decontamination station personnel are not issued DRDs or KI since the centers and stations are outside the EPZ. Category "C" Dosimetry applies. Simulated personal record dosimeters (PRDs) will be worn.

Radiation readings/contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pad (if used). Long runs of plastic covered with paper will not be demonstrated, but the materials may be available and explained (as appropriate). Positioning of a fire apparatus on-site may be simulated if otherwise required.

Note: Re-demonstrations may be performed as appropriate and time permitting.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

SUB-ELEMENT 6.B – MONITORING AND DECONTAMINATION OF EMERGENCY WORKER EQUIPMENT

Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment including vehicles. (NUREG-0654, K.5.b)

- **Was this Criterion selected?** YES__X___ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

EXTENT OF PLAY

The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the ORO's plans and procedures. Specific attention should be given to equipment, including vehicles, that was in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment including vehicles based on guidance levels and procedures stated in the plan and/or procedures.

The area to be used for monitoring and decontamination should 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 should 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 air intake systems, radiator grills, bumpers, wheel wells, tires, and door handles should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.

Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, may be simulated and conducted by interview.

All activities associated with this criterion 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Emergency worker station personnel will consist of a minimum of one monitor and one recorder and sufficient personnel to demonstrate monitoring of at least one vehicle. Schematics of these monitoring/decontamination stations will be available to show organization and space management within the facility. The evaluator will request that decontamination procedures be explained after the vehicle which has simulated contamination has been monitored. One radiological survey meter will be issued to each monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package, and injected by a controller. Set-up of the facility will be performed as closely as possible to that for an actual emergency with all route markings in place including clearly defined exit areas, per contamination control procedures and/or step-off pads (if used); with the exception of long runs of plastic covered with

paper which will not be demonstrated, but the materials will be available and explained (as appropriate). Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated , will be simulated and conducted by interview.

Note: Re-demonstrations may be performed as appropriate and time permitting.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.c - Temporary Care of Evacuees

Criterion 6.c.1: Managers of congregate care facilities demonstrate that the centers have resources to provide services and accommodations consistent with American Red Cross planning guidelines (found in MASS CARE-Preparedness Operations, ARC 3031). Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h., 12.)

- **Was this Criterion selected?** YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross under existing letters of agreement.

EXTENT OF PLAY

Under this criterion, demonstration of congregate care centers may be conducted out of sequence with the exercise scenario. The evaluator should conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with ARC 3031. In this simulation, it is not necessary to set up operations, as they would be in an actual emergency. Alternatively, capabilities may be demonstrated by setting up stations for various services and providing those services to simulated evacuees. Given the substantial differences between demonstration and simulation of this criterion, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

Congregate care staff should also demonstrate the capability to ensure that evacuees have been monitored for contamination, have been decontaminated as appropriate, and have been registered before entering the facility. This capability may be determined through an interview process.

If operations at the center are demonstrated, material that would be difficult or expensive to transport (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility(ies). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.

All activities associated with this criterion 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.

PEMA Negotiated Extent of Play: In accordance with plans and procedures.

Counties demonstrating the operation of mass care centers during the out-of-sequence window (Lancaster and York) will provide floor plans of the mass care centers to show organization within the facility and space management during a real emergency. Mass care center locations are listed in the demonstration tables "Demonstration of Mass Care Centers (Attachment A, Section I.B.4)".

Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The responsible American Red Cross chapter will show the source and quantities, by job functional description, to be provided to mass care centers to support the 24-hour operation. The responsible Red Cross Chapter(s) will be visited, or telephonically contacted during business hours on March 28, 2012, by an exercise evaluator, or interviewed at the mass care center(as appropriate) during the out-of-sequence evaluation to provide information regarding the 24-hour operation. Schematics of these mass care centers will be available, during the demonstration window, to show organization within the facility and space allocation for the registration and sheltering the evacuating public. Necessary signs, directional arrows and forms will be available and used to demonstrate registration, at a minimum, of three evacuees requiring emergency housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators. This out-of-sequence demonstration window will be from 7:00 PM – 9:30 PM on March 28, 2012.

American Red Cross Chapters and Points of Contact (POC) are as follows:

Chester County
Southeast Pennsylvania Chapter
23rd & Chestnut Streets
Philadelphia PA 19103
Clifton Salas (215) 299-4063

ARC of the Susquehanna Valley
430 West Orange Street
Lancaster, PA 17603
Chris Weidenhammer (717) 299-5561; cell (717) 712-6274

York County Chapter
724 South George Street
York, PA 17403
Robert Straw (717) 845-2751

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.d - Transportation and Treatment of Contaminated Injured Individuals

Criterion 6.d.1: The facility/ORO has the appropriate space, adequate resources, and trained personnel to provide transport, monitoring, decontamination, and medical services to contaminated injured individuals. (NUREG-0654, F.2, H.10., K.5.a.b., L.1., 4.)

- **Was this Criterion selected?** YES X NO ____ N/A ____

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

EXTENT OF PLAY

Monitoring, decontamination, and contamination control efforts will not delay urgent medical care for the simulated victim.

OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service, any vehicle (e.g., car, truck, or ambulance) may be utilized to transport a simulated victim to the medical facility. Normal communications between the ambulance/ dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur prior to releasing the ambulance from the drill. This would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Monitoring of the simulated victim may be performed prior to transport, done en-route, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.

All activities associated with this criterion 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.

PEMA Negotiated Extent of Play: This sub-element was evaluated at Brandywine Hospital, Chester County on October 28, 2011.

ATTACHMENT A

I. PLUME PHASE EXERCISE

A. Activities – March 27, 2012

1. County Emergency Operations Center (EOCs)
   Time: Per Exercise Scenario

DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES		
COUNTY	DATE	TIME
Chester	EXEMPT	Exercise Scenario
Lancaster	March 27, 2012	Exercise Scenario
York	March 27, 2012	Exercise Scenario

2. Municipal Emergency Operations Center (EOCs)
   Time: Per Exercise Scenario

DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES		
RISK COUNTY	DATE	TIME
Chester	West Nottingham	March 27, 2012
Lancaster	***Drumore Township (2006/12)***	March 27, 2012
	East Drumore Township (2008)	March 27, 2012
	Fulton Township (2008)	March 27, 2012
	Little Britain Township (2008)	March 27, 2012
	Martic Township	March 27, 2012
	Providence Township	March 27, 2012
	Quarryville Borough (2006/08/12)	March 27, 2012
York	*Delta/Peach Bottom Twps (2008)	March 27, 2012
	****Fawn Twp/Fawn Grove Borough (2006/12)***	March 27, 2012
	Lower Chanceford Township	March 27, 2012

* Joint EOC

3. One back-up route alerting demonstration by one municipality in each risk county. (During scenario Exercise)

BACK UP ROUTE ALERTING		
COUNTY	MUNICIPALITY	DATE
Chester	EXEMPT – West Nottingham Township	N/A
Lancaster	***Drumore Township***	March 27, 2012
York	****Fawn Township/Fawn Grove Borough***	March 27, 2012

4. Traffic and Access Control Points

a. Each municipal/regional police force with a TCP assigned in its plan will demonstrate all preparation duties including TCP responsibilities and radiological briefing. Dispatch of persons to the TCP site will not occur during the exercise.

b. Municipal and county staffs will be prepared to brief the FEMA evaluator on actions to be taken should there be an impediment to evacuation on a designated route. This will be demonstrated during the Plume Exercise on March 27, 2012.

These municipal/regional police forces are (by county): N/A

Chester	Lancaster	York
N/A	Quarryville Borough – N/A	N/A

B. Out-of-Sequence Activities – March 27-28, 2012

1. Risk Public School Districts with schools located within the EPZ and those districts situated outside the EPZ, but with students living within the EPZ, will participate and be evaluated by FEMA. Each identified District Administration Office will be evaluated. When a school system is comprised of multiple buildings (High School, Middle School, Elementary School), the affected buildings (those with students from the EPZ) will be evaluated on a rotational basis to coincide with the six-year exercise cycle.

Time: Out of Sequence – **9:00 – 11:00 AM on March 28, 2012**

- Asterisks (*) items indicate buildings not in EPZ – students may live in the EPZ
- "***Bold***" indicated those facilities that are scheduled for federal evaluation.

COUNTY	SCHOOL DISTRICT	SCHOOLS (approx. 1/3rd evaluated)	EVALUATED
Chester	Oxford Area (5)	1. Jordan Bank/Elementary School *	2008
		2. Nottingham Elementary School *	2008
		3. Elk Ridge School *	2002/10 (1)
		***4. Penn's Grove Middle School** *	2006/**12**
		5. Oxford Area HS *	2004/10
Lancaster	Penn Manor (3)	***1. Martic Elementary***	2006/**12**
		2. Penn Manor High School *	2008
		3. Marticville Middle School *	2010 (1)
	Solanco (6)	1. Solanco High School	2010
		2. Swift Middle School	2008
		3. Smith Middle School	2006/**12**
		4. Quarryville Elementary School	2008
		5. Clermont Elementary School	2002/10 (1)
		6. Providence Elementary School *	2010
York	South Eastern SD (5)	1. Fawn Elementary	2010
		2. Delta/ Peach Bottom Elementary	2006/**12**
		3. SE Middle School East	2010 (1)
		4. SE Middle School West	2008
		5. Kennard Dale High School	2008
	Red Lion (4)	1. Red Lion Sr High *	2010 (2)
		2. Red Lion Jr High *	2008
		***3. Clearview Elementary** *	2006/**12**
		***4. Larry J. Macaluso Elementary** *	**NEW/2012**

2. Traffic and Access Control Points

a. The Pennsylvania State Police from all three county troop locations will be briefed at the PSP York Barracks, located at the Loganville Exit on I-83, York County. Members attending the briefing will not actually deploy to the TCP/ACPs.

b. The PSP briefing will be performed out of sequence in a demonstration window of 10:00 a.m. – 12:00 noon on March 28, 2012.

3. Reception Centers: The asterisks (*) indicate monitoring/decontamination center activities at the respective reception centers.

DEMONSTRATION OF RECEPTION CENTERS		
COUNTY	DATE	TIME
Chester (1)	EXEMPT – current 6 yr cycle	n/a
Lancaster	March 28, 2012	7:00 p.m. – 9:30 p.m
York (2)	March 28, 2012	7:00 p.m. – 9:30 p.m.

RECEPTION CENTER LOCATIONS		
COUNTY	LOCATION	EVALUATED
Chester (1)	EXEMPT – Octorara Middle School	2006/10
Lancaster	***Lancaster County Career & Technology Center***	**2006/12**
York (2)	***Red Lion Sr. High School***	2006/12
	EXEMPT - Southern School Complex MS	2009/11 (TMI)

4. Mass Care Centers: The asterisks (*) indicate monitoring/ decontamination center activities at their mass care centers.

DEMONSTRATION OF MASS CARE CENTERS/ HOST SCHOOLS		
COUNTY	DATE	TIME
Chester (1)	EXEMPT –	N/A
Lancaster (3)	March 28, 2012	7:00 p.m. – 9:30 p.m
York (2)	March 28, 2012	7:00 p.m. – 9:30 p.m.

MASS CARE CENTER LOCATIONS		
COUNTY	LOCATION	EVALUATED
Chester (1)	EXEMPT – Octorara High School	2006/09 (LGS)
Lancaster (3)	****Penn Manor High School***	2006/**12**
	*Manheim Township School Complex:	2007/11 (TMI)
	Manheim Township MS	
	Manheim Township HS	
	*Lampeter Strasburg School Complex:	2004/08/10
	Lampeter Strasburg High School	
	Lampeter Strasburg Martin Meylin Middle School	
	Lampeter Strasburg Hans Herr Elementary School	
	Lampeter Elementary (2008)	
	Mass Care overflow capacity facilities include:	
	Hempfield Sr. High School	2009 (TMI)
	Franklin & Marshall College	Walk-Down – 02/23

	Manor Middle School	Walk-Down – 02/23
	Conestoga Valley HS	2011 (TMI)
	Conestoga Valley MS	2011 (TMI)
	Garden Spot High & Middle School Complex	Walk-Down – 02/23
	Warwick HS	2011 (TMI)
	Warwick MS	2011 (TMI)
	Cocalico HS	2011 (TMI)
	Cocalico MS	2011 (TMI)
York (2)	****Red Lion School Complex:***	2006/**12**
	Red Lion Sr High School	
	Red Lion Jr High School	
	*Southern School Complex:	2005/11 (TMI)
	Southern Middle School	
	Susquehannock High School	
	Mass Care overflow capacity facilities:	
	Spring Grove High & Intermediate School Complex	Walk-Down – 03/01
	Spring Grove Middle School	Walk-Down – 03/01
	York County 4-H (people w/pets)	Walk-Down – 03/01
	Dallastown High & Middle School Complex	Walk-Down – 03/01
	Additional Mass Care overflow capacity facilities:	
	Southwestern High & Markle Intermediate School Complex	Walk-Down – 03/01
	Red Lion Fire Company	Walk-Down – 03/01

5. Emergency worker monitoring/decontamination station(s) for the risk county.

EMERGENCY WORKER MONITORING/DECONTAMINATION STATION		
COUNTY	LOCATION	EVALUATED
Chester (1)	***Penns Grove Middle School***	2006/**12**
Lancaster (1)	***Lampeter Strasburg Field House***	2006/08/**12**
York (2)	***Brogue Ambulance Company***	2006/**12**
	EXEMPT - Stewartstown Fire Company	2004/10

ATTACHMENT B
FEDERAL EVALUATION PROCESS MATRIX

Evaluation Area	Consolidate	Frequency	Out-of-Sequence of Exercise Scenario	Credit	Staff Assistance Visit
1. Emergency Operations Management	1, 2, 3, 4, 5, 14, 17, 30				
Mobilization		Every Exercise	NO	YES	NO
Facilities		Once if new[1]	NO	YES	YES
Direction and Control		Every Exercise	NO	NO	NO
Communications Equipment		a) Once if new[1]	YES	YES	YES
Equipment and Supplies to Support Operations		Every Exercise	YES	YES	YES
2. Protective Action Decision-making	5, 7, 9, 14, 15, 16, 17, 26, 28				
Emergency Worker Exposure Control		Every Exercise	YES	YES	YES
Radiological Assessment & Protective Action Recommendations & Decisions for the Plume Phase of the Emergency		Every Exercise	NO	NO	NO
Protective Action Decisions for the Protection of Special Populations		Every Exercise	NO	NO	NO
Radiological Assessment & Decision-making for the		Once in 6 yrs.	NO	NO	NO

Evaluation Area	Consolidate	Frequency	Out-of-Sequence of Exercise Scenario	Credit	Staff Assistance Visit
Ingestion Exposure Pathway[2]					
Radiological Assessment & Decision-making Concerning Relocation, Re-entry, and Return[2]		Once in 6 yrs.	NO	NO	NO
3. Protective Action Implementation	5, 14, 15, 16, 17, 27, 29				
Implementation of Emergency Worker Exposure Control		Every Exercise	YES	YES	NO
Implementation of KI Decision		Once in 6 yrs.	YES	NO	NO
Implementation of Protective Actions for Special Populations		Once in 6 yrs.[3]	YES	YES	YES
Implementation of Traffic and Access Control[4]		1 per Organization per exercise	YES	YES	YES
Implementation of Ingestion Pathway Decisions		Once in 6 yrs.	NO	NO	NO
Implementation of Relocation, Re-entry, and Return decisions		Once in 6 yrs.	NO	NO	NO
4. Field Measurement and Analysis	6, 8, 24, 25				
Plume Phase Field Measurements & Analysis		Every Full Participation Exercise	YES	YES	NO
Post Plume Phase Field Measurements and Sampling		Once in 6 yrs.	YES	YES	NO
Laboratory Operations		Once in 6 yrs.	YES	YES	NO
5. Emergency Notification and Public Information	10, 11, 12, 13				
Activation of the Prompt Alert and Notification System	10	Every exercise	NO	NO	NO
Activation of the Prompt Alert and Notification System (Fast Breaking)	10	Separate Drill once in 6 yrs.	NO	NO	NO
Emergency Information & Instructions for the Public and the		Every exercise	NO	NO	NO

Evaluation Area	Consolidate	Frequency	Out-of-Sequence of Exercise Scenario	Credit	Staff Assistance Visit
Media					
6. Support Operations/Facilities	18, 19, 20, 21, 22				
Monitoring & Decontamination of Evacuees and Emergency Workers[3] & Registration of Evacuees		Once in 6 yrs.	YES	NO	NO
Monitoring & Decontamination of Emergency Worker Equipment[3]		Once in 6 yrs.	YES	NO	NO
Temporary Care of Evacuees[6]		Once in 6 yrs.	YES	YES	YES
Transportation and Treatment of Contaminated Injured Individuals		Every 2 years	YES	YES	NO

[1] Will be evaluated if new or changed substantially.
[2] The plume phase and the post-plume phase (ingestion, relocation, re-entry and return) can be demonstrated separately.
[3] All facilities must be evaluated once during the six-year exercise cycle.
[4] Physical deployment of resources is not necessary.
[5] Facilities managed by the American Red Cross (ARC), under the ARC/FEMA MOU, will be evaluated once when designated or when substantial changes occur; all other facilities not managed by the ARC must be evaluated once in the six-year exercise cycle.
[6] Each State within the 10-mile EPZ of a commercial nuclear power site shall fully participate in an exercise jointly with the licensee and appropriate local governments at least every two years. Each State with multiple sites within its boundaries shall fully participate in a joint exercise at some site on a rotational basis at least every two years. When not fully participating in an exercise at a site, the State shall partially participate at that site to support the full participation of the local governments.

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