



Three Mile Island Nuclear Generating Station

Middletown, PA

After Action Report/Improvement Plan

Exercise Date – May 7, 2019

Radiological Emergency Preparedness (REP) Program



FEMA

Published August 19, 2019

This page is intentionally blank.

Three Mile Island Nuclear Generating Station After Action Report/Improvement Plan

Published August 19, 2019

EXECUTIVE SUMMARY	5
SECTION 1: EXERCISE OVERVIEW	6
1.1 Exercise Details.....	6
1.2 Exercise Planning Team Leadership	6
1.3 Participating Organizations	8
SECTION 2: EXERCISE DESIGN SUMMARY	17
2.1 Exercise Purpose and Design	17
2.2 Exercise Objectives, Capabilities and Activities.....	20
2.3 Scenario Summary	21
SECTION 3: ANALYSIS OF CAPABILITIES.....	23
3.1 Exercise Evaluation and Results.....	23
3.2 Summary Results of Exercise Evaluation	23
3.3 Criteria Evaluation Summaries	30
3.3.1 State Jurisdictions	30
3.3.2 Risk Jurisdictions	33
3.3.3 Support Jurisdictions.....	52
3.3.4 Private Organizations.....	53
SECTION 4: DEMONSTRATED STRENGTHS	55
SECTION 5: CONCLUSION.....	59
APPENDIX A: EXERCISE TIMELINE.....	60
APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS	65
APPENDIX C: ACRONYMS AND ABBREVIATIONS.....	69
APPENDIX D: EXTENT OF PLAY AGREEMENT	74

This page is intentionally blank.

EXECUTIVE SUMMARY

On May 7, 2019, a full-scale Plume Exposure Pathway exercise was conducted and evaluated for the 10-Mile Emergency Planning Zone (EPZ) around the Three Mile Island Nuclear Generating Station (TMINGS) by the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA), Region III. The previous full participation exercise at this site was evaluated on April 11, 2017.

Out-of-Sequence demonstrations were conducted during the week of May 6, 2019. The purpose of the Exercise and Out-of-Sequence demonstrations was to assess the capabilities of State, counties, and local jurisdictions to implement Radiological Emergency Plans and Procedures (RERP) to protect the property and lives of residents and transients in the event of an emergency at the Three Mile Island Nuclear Generating Station. The findings in this report are based on the evaluations of the Federal evaluation team, with final determinations made by the FEMA, Region III Regional Assistance Committee (RAC) Chairperson, and approved by FEMA Headquarters. These reports are provided to the Nuclear Regulatory Commission (NRC) and participating States. State and local governments utilize the findings contained in these reports for the purposes of planning, training, and improving emergency preparedness.

The evaluation of this exercise determined that there were no Level 1 Findings, one Level 2 Finding (successfully re-demonstrated on July 29, 2019), and five Plan Issues. All five of the Plan Issues have been resolved at the time of this report. The School Districts of Central York, Northeastern, and West Shore have successfully updated their plans and were submitted on June 24, 2019. PEMA submitted their outstanding plan changes on July 29, 2019. All prior Performance and Plan Issues were resolved during the 2017 exercise.

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

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

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

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania; the five risk jurisdictions of Cumberland, Dauphin, Lancaster, Lebanon and York, counties; the three support counties, Adams, Franklin and Schuylkill; and the 14 Commonwealth of Pennsylvania participating municipalities. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency

services to their communities. Cooperation and teamwork of all the participants were evident during the exercise.

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

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

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

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

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

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

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

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Plume 2019-05-07

Type of Exercise

Plume

Exercise Date

May 07, 2019

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Plume Exposure Pathway

1.2 Exercise Planning Team Leadership

Jennifer Greene

Technological Hazards Program Specialist

DHS/FEMA Region III

One Independence Mall, 6th Floor

615 Chestnut Street

Philadelphia, PA, 19106-4404

(202) 812-5748

jennifer.greene@fema.dhs.gov

Laurin Fleming

Emergency Management Specialist

Pennsylvania Emergency Management Agency

1310 Elmerton Avenue

Harrisburg, PA 17110

717-651-2119

lauflemimg@pa.gov

Wade DeHaas

Radiation Health Physicist

Dept. of Environmental Protection

Bureau of Radiation Protection

Rachel Carlson State Office Building

Harrisburg, Pennsylvania, 17105

717-787-2699

wdehaas@pa.gov

Sara Reese
Offsite Coordinator
Exelon Energy Company
Three Mile Island Nuclear Generating Station
200 Exelon Way
Kennett Square, Pennsylvania, 19348
267-533-1426
Sara.Schmidt@exeloncorp.com

1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Three Mile Island Nuclear Generating Station exercise:

State Jurisdictions

Commonwealth of Pennsylvania

- Bureau of Radiation Protection (BRP)
- Commonwealth Response Coordination Center (CRCC)
- Pennsylvania Department of Agriculture (PDA)
- Pennsylvania Department of Conservation and Natural Resources (DCNR)
- Pennsylvania Department of Corrections (DOC)
- Pennsylvania Department of Education (PDE)
- Pennsylvania Department of Environmental Protection (DEP)
- Pennsylvania Department of Fish and Boat (F&B)
- Pennsylvania Department of General Services (DGS)
- Pennsylvania Department of Health (PADoH)
- Pennsylvania Department of Homeland Security (PADHS)
- Pennsylvania Department of Human Services (DHS)
- Pennsylvania Department of Military and Veteran Affairs (DMVA)
- Pennsylvania Department of Probation and Parole (DPP)
- Pennsylvania Department of Revenue (PDR)
- Pennsylvania Department of Transportation (PennDoT)
- Pennsylvania Emergency Management Agency (PEMA)
- Pennsylvania Game Commission (PGC)
- Pennsylvania State Fire Commissioner (PASFC)
- Pennsylvania State Police (PSP)
- Pennsylvania Turnpike Commission (PATC)
- Pennsylvania Utilities Commission (PUC)

Risk Jurisdictions

Cumberland County

- Big Spring High School
- Big Spring School District
- Cumberland County 9-1-1 Communication Center
- Chamberlain Valley Amateur Radio Club RACES

- Cumberland County Board of Commissioners Office
- Cumberland County Emergency Operations Center
- Cumberland County Department of Public Safety
- Cumberland County HazMat
- Cumberland County Information Management Technology Office
- Cumberland County Mental Health, Intellectual and Developmental Disabilities
- Cumberland County Sheriff's Office
- Cumberland County Special Hazards Operating Team
- New Cumberland Borough Council
- New Cumberland Borough Emergency Operations Center
- New Cumberland Police Department
- New Cumberland Borough Volunteer Fire Department
- Newville Emergency Management Agency
- Newville Company 47 Fire and Emergency Management Services
- South Mountain Repeater Association

Dauphin County

- City of Harrisburg Bureau of Fire
- Central Dauphin School District
- Conewago Elementary School
- Dauphin County Commissioners Office
- Dauphin County Coroner's Office
- Dauphin County Crisis Intervention
- Dauphin County Department of Public Safety
- Dauphin County District Attorney's Office
- Dauphin County Emergency Operations Center
- Dauphin County Hazardous Materials Response Team
- Dauphin County IT Department
- Dauphin County Mental Health and Intellectual Disability
- Dauphin County Central School District Administration
- Derry Township Early Childhood Center
- Derry Township Emergency Management Agency
- Derry Township Information Technology
- Derry Township Police
- Derry Township RACES
- Derry Township School District
- Environmental Products and Services
- Foose Elementary School
- Greater Pennsylvania Region American Red Cross
- Halifax High School
- Harrisburg Area Community College
- Harrisburg School District
- Hershey Fire Department
- Hummelstown Borough Council

- Hummelstown Borough Chemical Fire Department Station 46
- Hummelstown Borough Emergency Management Agency
- Hummelstown Borough Fire Police
- Hummelstown Borough Mayor's Office
- Hummelstown Borough Police Department
- John C. Kunkel Elementary School
- Lawton Elementary School
- Lenkerville Elementary School
- Lower Dauphin School District
- Lower Swatara Township Board of Commissioners
- Lower Swatara Township Emergency Management Agency
- Lower Swatara Township Fire Department
- Lower Swatara Township Police Department
- Lower Swatara Township Public Works
- Middletown Area School District
- Middletown Borough Police Department
- Middletown Borough Fire Department
- Middletown Borough Administrative Department
- Middletown Borough Council
- Middletown Borough Emergency Management Agency
- Middletown Borough Mayor Office
- Middletown Borough Public Works
- Middletown Borough Volunteer Fire Department
- Milton Hershey School
- Nye Elementary School
- Paxtang Elementary School
- Penn State Extension
- Royalton Borough Emergency Management Agency
- Royalton Borough Council
- Royalton Borough Mayor's Office
- Royalton Borough Police Department
- Royalton Borough Public Works
- South Side Elementary School
- Steelton Borough Council
- Steelton Borough Emergency Management Agency
- Steelton Borough Fire Department
- Steelton Borough Police Department
- Steelton Borough Public Works
- Steelton-Highspire High School
- Steelton-Highspire School District
- Swatara Township Codes Office
- Swatara Township Commissioners
- Swatara Township Emergency Management Agency
- Swatara Township Fire and Rescue

- Swatara Township Police Department
- Swatara Township Public Works/Parks and Recreation
- Sylvan Heights Charter School

Lancaster County

- Bainbridge Elementary School
- Bainbridge Fire Department
- Bear Creek Elementary School
- Cocalico High School
- Cocalico Middle School
- Conestoga Valley High School
- Conoy Township
- Elizabethtown Area School District
- Elizabethtown Borough Regional Emergency Management Agency
- Elizabethtown Borough Police Department
- Elizabethtown Borough Fire Department
- Elizabethtown Borough Fire Police
- Elizabethtown Borough HazMat
- Franklin & Marshall College Field House
- HAZMAT 2 Environmental Fire and Rescue Inc
- Hempfield Fire Department Station 69
- Hempfield High School
- Lancaster County Auxiliary Communication Services
- Lancaster County Care and Rescue Team
- Lancaster County Emergency Operations Center
- Lancaster County Emergency Management
- Lawn Fire Company
- Manheim Township High School
- Manheim Township Middle School
- Mill Road Elementary School
- Mount Joy Township
- Mount Joy Fire Department
- Rheems Fire and Rescue
- Susquehanna Regional Police Department
- Valley Middle School
- Warwick High School
- Warwick Middle School
- West Donegal Township
- Western Emergency Management Association
- West Shore Bureau of Fire – Station #2

Lebanon County

- Annville Fire Department
- Campbelltown Volunteer Fire Company
- Cedar Crest High School

- County Career and Technical Center
- Friendship Hose Company #1
- Lebanon County Radio Amateur Civil Emergency Service
- Lebanon County Commissioners Office
- Lebanon County Department of Emergency Services
- Lebanon County Department of Emergency Services 911
- Lebanon County Department of Emergency Services
- Lebanon County Department of Emergency Services Hazmat Team
- Lebanon County Emergency Management Agency
- Lebanon County Emergency Operations Center
- Lebanon County Fire Department
- Lebanon County Sheriff's Office
- Lebanon Transit
- Lebanon Valley Society of Radio Amateurs
- South Central Task Force
- South Londonderry Police Department
- South Londonderry Township
- West Lebanon County Regional Emergency Management Agency

York County

- Carroll Township Emergency Management Agency
- Central Pennsylvania Transportation Authority
- Central York High School
- Central York School District
- Cross Roads Middle School
- Dover Area School District
- Dover Borough Fire Department
- Dover Township Volunteer Fire Department
- Eastern York County Emergency Management
- Eastern York School District
- Fairview Elementary School
- Fairview Township
- Fairview Township Emergency Management Agency
- Fairview Township Fire Department
- Fairview Township Police
- Goldsboro Borough
- Goldsboro Emergency Management Agency
- Goldsboro Fire Police
- Hillside Elementary School
- Lewisberry Borough
- Monaghan Township Volunteer Fire Company
- Mount Wolf Elementary School
- Newberry Area Regional Emergency Management
- Newberry Fire/EMS Department

- Newberry Township
- Newberry Township Board of Supervisors
- Newberry Township Police Department
- Newberry Township Public Works
- Northeastern Emergency Management Services
- Northeastern School District
- Northeastern Regional Police Department
- Northern High School
- Northern Regional Police Department
- Northern York County Emergency Management
- Northwest Regional Police
- Northwest EMS Inc.
- Red Lion Borough Emergency Management Agency
- York-Adams Disaster, Crisis, Outreach and Referral Team (DCORT)
- York Area Emergency Management
- York Area United Fire and Rescue
- York ARES RACES Skywarn
- York County 911
- York County Commissioners
- York County Department of Emergency Services
- York County Department of Health
- York County Emergency Operations Center
- York County HazMat Team
- York County Human Services
- York County Office of Emergency Management
- York County Penn State Extension
- York County Sheriff's Office
- York Haven Borough
- York Spring Fire Department
- Warrington Emergency Management Agency
- Warrington Township
- West Shore School District

Support Jurisdictions

Adams County

- Adams County 911 Center
- Adams County Department of Emergency Services
- Adams County Emergency Medical Services
- Adams County Fire Police
- Adams County Sheriff's Office
- Bendersville Community Fire Company
- Gettysburg High School
- Gettysburg Middle School

Franklin County

- Chambersburg Middle School South
- Franklin County Commissioner's Office
- Franklin County Sheriff's Department
- Green Township

Schuylkill County

- Blue Mountain High School
- Hose Hook & Ladder Company
- Good Intent Fire Company
- Schuylkill Emergency Management Agency
- Schuylkill County Commissioners Office
- Schuylkill County Communications Center

Private Organizations

- American Red Cross
- American Red Cross Greater PA Region
- American Red Cross Central Pennsylvania Chapter
- American Red Cross Mid-Central Pennsylvania Chapter
- American Red Cross, South Central, PA Chapter, Greater PA Region
- American Red Cross Greater Pennsylvania Region
- Dillsburg Ministerium
- Environmental Products and Services of Vermont, Incorporated
- Exelon
- Gettysburg Hospital
- Hershey Entertainment and Resorts
- Penn State Health/Hershey Medical Center
- Penn State University Agriculture
- Life Team Emergency Medical Services
- MET-ED – First Energy
- Northern York Regional Emergency Management Association
- Siemens
- South Central PA Chapter from York County American Red Cross
- South Mountain Radio Amateurs
- Penn State University Branch Extension

Federal Organizations

- Environmental Protection Agency
- Federal Emergency Management Agency
- Nuclear Regulatory Commission

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

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

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

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

Representatives of these agencies serve on the Region III Regional Assistance Committee (RAC), which is Chaired by FEMA. A REP Plume Exposure Pathway Exercise was conducted during the week of May 7, 2019 to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Three Mile Island Nuclear Generating Station (TMINGS). The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency. The findings presented in this report are based on the

evaluations of the Federal evaluation team, with final determinations made by the FEMA Region III RAC Chairperson and approved by FEMA Headquarters.

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

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
- Radiological Emergency Preparedness Program Manual, January 2016

Emergency Planning Zone Description:

Three Mile Island Nuclear Generating Station is in south-central Pennsylvania in Londonderry Township, Dauphin County. The TMINGS (40° 9' 12" N/76° 43' 25" W) is a nuclear power plant operated by Exelon Nuclear. The site consists of two pressurized water-type units. Unit One is an 819-megawatt (MW) reactor, and Unit Two is a 906-MW reactor. Unit 1 received its license in June 1974 and began commercial operation in September 1974. Unit 2 began commercial operation in February 1978; it was damaged in March 1979 and has been shut down and placed in a monitored storage mode. The minimum exclusion distance specified for the TMINGS plant is 2,000 feet. Included within the 2,000-foot radius are a portion of Three Mile Island, a portion of Shelly Island, and a portion of the Susquehanna River. Exelon Nuclear owns all the land within the exclusion area.

The site is part of an 814-acre tract consisting of several adjacent islands in the Susquehanna River. The power plant is located on Three Mile Island, which is one of the largest islands of the group. The site is at an elevation of 300 feet above mean sea level (msl), relatively flat, and wooded on the periphery and the southern portion. Of the 470 acres that make up the island, the plant occupies approximately 200 acres in the northern portion.

Soils on the island are of the Duncannon-Chavies-Tioga Association, which is comprised of deposits of alluvial sand, silt, and clay. Underlying bedrock is red sandstone and shale. The normal pool elevation of the Susquehanna River in this area is 277 feet above msl. Hills on both sides of the river in this vicinity rise to elevations of over 500 feet. The plant grade is 300 feet above msl.

An access bridge for plant personnel connects State Route 441 with the north end of the island. A wooden bridge connects the southern portion of the island with State Route 441. Norfolk Southern rail lines are located on both sides of the river; the closest is a one-track line adjacent and parallel to Route 441 on the east shore.

The area within 10 miles of the TMINGS is in south-central Pennsylvania, and includes portions of Cumberland, Dauphin, Lancaster, Lebanon, and York counties. The site is surrounded mostly by farmland within a 10-mile radius. The nearest community is Goldsboro Borough, on the west shore of the Susquehanna River, 1 mile from the plant. The nearest major population center with

more than 25,000 people is Harrisburg (population 53,624), which lies just over 10 miles to the north.

Twenty-three industrial firms are located within a 5-mile radius; they employ approximately 2,400 people. The Harrisburg International Airport is located 2 miles northwest of the TMI plant. An NRC estimate of aircraft risk to TMI Units One and Two indicates an acceptably low risk for either unit, provided fewer than 2,400 operations per year are by aircraft more than 200,000 pounds. The NRC requires Exelon to continue periodic monitoring and reporting of airport usage and will reevaluate the adequacy of plant protection if aircraft traffic is reliably projected to exceed 2,400 operations per year.

The major railroads operating in the EPZ include Amtrak, Blue Mountain and Ridge, Chessie System, Conrail, and the Maryland and Pennsylvania Railroad.

The climate of the five-county risk EPZ is mild and humid. Weather is variable because the prevailing westerly winds bring both high and low-pressure systems through the area every few days. Average annual precipitation for the southern portion of the EPZ is about 38 inches and the average annual temperature is 52° F.

Based on the 2010 census, the total population of the 10-mile EPZ is 226,160. There are 97 sirens used to provide coverage of the plume exposure pathway EPZ.

2.2 Exercise Objectives, Capabilities and Activities

The objectives of the 2019 Three Mile Island Nuclear Generating Station (TMINGS) Plume Exercise were to demonstrate the capabilities of State and local emergency management agencies to mobilize emergency management and emergency response personnel, to activate emergency operations centers and support facilities, and to protect the health, lives, and property of the citizens residing within the 10-mile Emergency Planning Zone (EPZ).

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

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

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

2.3 Scenario Summary

Meteorological conditions are wind direction from 250 degrees with a wind speed of 8 miles per hour (mph) and a “D” stability class. The wind direction varies throughout the exercise from 259 to 271 degrees.

At 1611, TMINGS declared a Notification of an Unusual Event Emergency due to a train derailment that restricted access to both bridges.

At 1650 a Reactor Coolant System Failure occurs, and an Alert is declared at TMINGS. Notifications are made to off-site response organizations.

At 1750 a Site Area Emergency was declared due to an Un-isolable leak on the letdown line into the Auxiliary Building which caused possible fuel damage. The wind direction has changed to 259 degrees with a wind speed of 10 mph.

At 1850 a General Emergency is declared due to the loss of fission product barriers and a radiological release to the environment. A Protective Action Recommendation (PAR) is made by the Licensee and the Commonwealth of Pennsylvania makes a Protective Action Decision (PAD) based on plant conditions and meteorological data. Later, plant conditions worsen that results in an upgraded PAR from the Licensee and upgraded PAD by the Commonwealth of Pennsylvania. The PAD should be implemented by the county and local agencies.

At 2041 the exercise is terminated.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the May 7, 2019, biennial Plume Exposure Pathway EPZ Radiological Emergency Preparedness (REP) Exercise. The exercise was conducted to demonstrate the ability of the Offsite Response Organizations of State and local government to protect the health and safety of the public in the 10-mile Emergency Planning Zone surrounding the Three Mile Island Nuclear Generating Station.

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

3.2 Summary Results of Exercise Evaluation

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

- (D) Demonstrated Strength: an observed action, behavior, procedure, and/or practice that is worthy of special notice and positive recognition, note: this is already a common practice that many Regions employ when identifying demonstrated strengths.
- (L1) Level 1 Finding: an observed or identified inadequacy or organizational performance in an exercise that could cause a determination that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in event of a radiological emergency to protect the health and safety of the public living near a Nuclear Power Plant (NPP).
- (L2) Level 2 Finding: an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.
- (P) Plan Issue: an observed or identified inadequacy in the offsite response organizations' (OROs) emergency plan/implementation procedures, rather than that of the ORO's performance.
- (N) Not Demonstrated: term applied to the status of a REP exercise Evaluation Area Criterion indicating that the ORO, for a justifiable reason, did not demonstrate the Evaluation Area Criterion, as required in the extent-of-play agreement or at the two-year or eight-year interval required in the FEMA REP Program Manual.
- (M) Met: The jurisdiction or functional entity performed all activities under the Demonstration Criterion to the level required in the Extent-of-Play Agreement, with no Level 1 or Level 2 Findings assessed under that criterion in the current exercise and no unresolved prior Level 2 Findings.

Tables 3.1 - Summary of Exercise Evaluation

<p style="text-align: center;">DATE: 05/07/2019 SITE: Three Mile Island Nuclear Station - PA M: Met, L1: Level 1 Issue, L2: Level 2 Issue, P: Plan Issue, N: Not Demonstrated</p>	Mobilization	Facilities	Direction and Control	Communications Equipment	Equipment and Supplies to Support Operations
Emergency Operations Management	1a1	1b1	1c1	1d1	1e1
Joint Information Center (CRCC)	M			M	
Lebanon County Emergency Operations Center	M		M	M	M
Accident Assessment Center (CRCC)	M		M	M	M
Dauphin County Emergency Operations Center	M		M	M	
Lancaster County Emergency Worker Mon/Decon Center, Mount Joy Fire Department			M	M	M
Adams County Emergency Operations Center	M		M	M	M
Dauphin County Shelter Assessment Lenkerville Elementary School		M			
Commonwealth Response Coordination Center (PEMA)	M		M	M	M
Goldsboro Borough Emergency Operations Center	M	M	M	M	M
Adams County Reception/Mon/Decon/Mass Care Center, Gettysburg High School			M	M	M
Lebanon County Reception/Mon/Decon Center, County Career and Technical Center			M		
York County Emergency Worker Mon/Decon Center, Dover Borough Fire Department			M	M	M
Lower Swatara Township Emergency Operations Center	M		M	M	M
New Cumberland Borough Emergency Operations Center	M	M	M	M	M
New Cumberland Borough Back-up Route Alerting				M	M
Derry Township Emergency Operations Center	M	M	M	M	M
Hummelstown Borough Emergency Operations Center	M	M	M	M	M
Cumberland County Reception/Mon/Decon/Mass Care Center, Big Spring High School			M	M	M
Exelon Joint Information Center				M	M
South Londonderry Township Emergency Operations Center	M	M	M	M	M
Swatara Township Emergency Operations Center	M	M	M	M	M
Steelton Borough Emergency Operations Center	M		M	M	M
Lebanon County Mass Care Center, Cedar Crest High School				M	M
Lebanon County Emergency Worker Mon/Decon Center, Annville Fire Department			M	M	M
Lebanon County Back-up Route Alerting				M	M
Schuylkill County Reception/Mass Care/Mon/Decon Center, Blue Mountain High School			M	M	M
Newberry Regional EMA- Lewisberry Borough/Newberry Twp/York Haven Borough	M	M	M	M	M
York County Reception/Mon/Decon/Mass Care Center, Northern High School			M	M	M
Elizabethtown Borough/West Donegal Twp/Mt. Joy Twp Emergency Operations Center	M	M	M	M	M
Fairview Township Emergency Operations Center	M	M	M		M
Franklin County Emergency Operations Center	M		M	M	M
Middletown Borough Emergency Operations Center	M	M	M	M	M
Lancaster County Reception Center, Park City Mall			M		M
Northern York EMA/ Warrington Twp Emergency Operations Center	M	M	M	M	M
Conoy Township Emergency Operations Center			M	M	M
Lancaster County Back-up Route Alerting				M	M
York County Back-up Route Alerting				M	M
Dauphin County Mass Care Center, Halifax High School				M	M
Dauphin County Back-up Route Alerting				M	M
PA State Traffic/Access Control	M			M	M

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Exelon Emergency Operations Facility			M		M
Franklin County Reception/Mon/Decon/Mass Care Center, Chambersburg Middle School			M	M	M
Lancaster County Mass Care Center, Manheim Township High School				M	M
Cumberland County Emergency Operations Center			M		M
Royalton Borough Emergency Operations Center		M		M	M
Lancaster County Emergency Operations Center	M		M	M	M
York County Emergency Operations Center	M		M	M	M
Goldsboro Borough Emergency Operations Center	M		M	M	M
Cumberland County Emergency Worker Mon/Decon Center, Westshore Bureau of Fire Sta #2			M	M	M
Dauphin County Emergency Worker Mon/Decon Center, Harrisburg Area Community			M	M	M
Adams County Shelter Assessment Gettysburg Middle School		M			
Lancaster County Shelter Assessment Cocalico High School		M			
Lancaster County Shelter Assessment Cocalico Middle School		M			
Lancaster County Shelter Assessment Conestoga Valley High School		M			
Lancaster County Shelter Assessment Conestoga Valley Middle School		M			
Lancaster County Shelter Assessment Franklin & Marshal College Field		M			
Lancaster County Shelter Assessment Warwick High School		M			
Lancaster County Shelter Assessment Warwick Middle School		M			

<div>DATE: 05/07/2019</div> <div>SITE: Three Mile Island Nuclear Station - PA</div> <div>M: Met, L1: Level 1 Issue, L2: Level 2 Issue, P: Plan Issue, N: Not Demonstrated</div>	Emergency Worker Exposure Control	Dose Assessment & PARs & PADs for the Emergency Event		PADs for the Protection of persons with disabilities and access/functional needs	Radiological Assessment and Decision-making for the Ingestion Exposure Pathway	Radiological Assessment & Decision-making Concerning Post-Plume Phase Relocation, Reentry, and Return
Protective Action Decision-Making	2a1	2b1	2b2	2c1	2d1	2e1
Commonwealth Response Coordination Center (PEMA)	M	M	M	P		
Accident Assessment Center (CRCC)	M	M	M			
Cumberland County Emergency Operations Center				M		
Lancaster County Emergency Operations Center				M		
Exelon Emergency Operations Facility		M				
Dauphin County Emergency Operations Center				M		
Lebanon County Emergency Operations Center				M		
York County Emergency Operations Center				M		

DATE: 05/07/2019 SITE: Three Mile Island Nuclear Station - PA M: Met, L1: Level 1 Issue, L2: Level 2 Issue, P: Plan Issue, N: Not Demonstrated	Implementation of Emergency Worker Exposure Control	Implementation of KI Decision for Institutionalized Individuals and the Public	Implementation of Protective Actions for persons with disabilities and access/functional needs		Implementation of Traffic and Access Control		Implementation of Ingestion Exposure Pathway Decisions		Implementation of Post-Plume Phase Relocation, Reentry, and Return Decisions
Protective Action Implementation	3a1	3b1	3c1	3c2	3d1	3d2	3e1	3e2	3f1
West Shore School District				P					

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Commonwealth Response Coordination Center (PEMA)	P	M	M		M	M			
Steelton-Highspire School District				M					
North Eastern School District				P					
Central York School District				P					
New Cumberland Borough Traffic/Access Control						M			
Bear Creek Elementary School				M					
Early Childhood Center				M					
Lebanon County Emergency Operations Center	M	M	M		M	M			
Nye Elementary School				M					
Central Dauphin School District				M					
Lawnton Elementary School				M					
South Side Elementary School				M					
Harrisburg School District				M					
Lancaster County Emergency Worker Mon/Decon Center, Mount Joy Fire Department	M								
Foose Elementary School				M					
Middletown Area School District				M					
Sylvan Heights Charter School				M					
Derry Township School District				M					
Milton Hershey School				M					
Lebanon County Reception/Mon/Decon Center, County Career and Technical Center	M								
Milton Hershey School District				M					
John C. Kunkel Elementary School				M					
Cumberland County Emergency Operations Center	M	M	M		M	M			
York County Emergency Worker Mon/Decon Center, Dover Borough Fire Department	M								
Steelton-Highspire High School				M					
Lower Dauphin School District				M					
Conewago Elementary School (Lower Dauphin)				M					
Fairview Elementary School				M					
Derry Township Emergency Operations Center	M		M		M				
South Londonderry Township Emergency Operations	M		M		M				
Lebanon County Traffic/Access Control Points						M			
Swatara Township Emergency Operations Center	M		M		M				
Dauphin County Traffic / Access Control Points	M				M	M			
Adams County Reception/Mon/Decon/Mass Care Center, Gettysburg High School	M								
Goldsboro Borough Emergency Operations Center	M		M		M				
Lebanon County Reception/Mon/Decon Center, County Career and Technical Center	M								
Lebanon County Back-up Route Alerting	M								
Steelton Borough Emergency Operations Center	M		M		M				
Schuylkill County Back-up Route Alerting	M								
Newberry Regional EMA Emergency Operations Center	M		M		M				
Elizabethtown Borough/West Donegal Twp/Mt. Joy Twp	M		M		M				
New Cumberland Borough Emergency Operations Center	L2		M		M				
Cumberland County TACP						M			
Lancaster County Emergency Operations Center	M	M	M		M	M			
Middletown Borough Emergency Operations Center	M		M		M				

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

York County Reception/Mass Care/Mon/Decon Center, Northern High School	M								
Hillside Elementary School				M					
Northern York EMA/ Warrington Twp Emergency Operations Center	M		M		M				
Lancaster County Back-up Route Alerting	M				M				
York County Back-up Route Alerting	M								
Dauphin County Back-up Route Alerting	M					M			
PA State Police Traffic/Access Control Points	M				M				
Bainbridge Elementary School				M					
Elizabethtown Area School District				M					
Mill Road Elementary School				M					
Lower Swatara Township Emergency Operations Center	M		M		M				
Chambersburg Middle School South	M								
Central York High School				M					
Conoy Township Emergency Operations Center	M		M		M	M			
Dauphin County Emergency Operations Center	M	M	M		M	M			
Hummelstown Borough Emergency Operations Center	M		M		M				
Royalton Borough Emergency Operations Center	M		M		M				
York County Emergency Operations Center	M	M	M		M				
Fairview Township Emergency Operations Center	M		M		M				
Goldsboro Borough Emergency Operations Center	M		M		M				
Lawton Elementary School				M					
Paxtang Elementary School				M					
Derry Township Early Childhood Center				M					
Northeastern School District				M					
Conewago Elementary School				M					
Mount Wolf Elementary School				M					
Crossroads Middle School				M					
Cumberland County Reception/Mon/Decon/Mass Care Center, Big Spring High School	M								
Dauphin County Mass Care/Mon/Decon Center, Halifax High School	M								
Schuylkill County Reception/Mon/Decon/Mass Care Center, Blue Mountain High School	M								
Cumberland County Emergency Worker Mon/Decon Center, Westshore Bureau of Fire Station #2	M								
Dauphin County Emergency Worker Mon/Decon Center, Harrisburg Area Community College	M								

<p style="text-align: center;">DATE: 05/07/2019 SITE: Three Mile Island Nuclear Station - PA M: Met, L1: Level 1 Issue, L2: Level 2 Issue, P: Plan Issue, N: Not Demonstrated</p>				<p style="text-align: center;">Activation of the Prompt Alert and Notification System</p>				<p style="text-align: center;">Emergency Information and Instructions for the Public and the Media</p>
Emergency Notification and Public Information				5a1	5a2	5a3	5a4	5b1

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Joint Information Center (CRCC)					M
Cumberland County Emergency Operations Center	M		M		M
Adams County Emergency Operations Center					M
Lancaster County Emergency Operations Center	M		M		M
Lebanon County Emergency Operations Center	M		M		M
Commonwealth Response Coordination Center (PEMA)	M				
New Cumberland Borough Police Department			M		
Exelon Joint Information Center (EOF Coatesville)					M
Lebanon County Back-up Route Alerting			M		
Franklin County Emergency Operations Center					M
Schuylkill County Emergency Operations Center					M
Lancaster County Back-up Route Alerting			M		
York County Back-up Route Alerting			M		
Dauphin County Back-up Route Alerting			M		
Dauphin County Emergency Operations Center	M		M		M
York County Emergency Operations Center			M		

<p style="text-align: center;">DATE: 05/07/2019 SITE: Three Mile Island Nuclear Station - PA M: Met, L1: Level 1 Issue, L2: Level 2 Issue, P: Plan Issue, N: Not Demonstrated</p>	Monitoring, Decontamination, and Registration of Evacuees	Monitoring and Decontamination of Emergency Workers and their Equipment and Vehicles	Temporary Care of Evacuees	Transportation and Treatment of Contaminated Injured Individuals
Support Operations to Facilities	6a1	6b1	6c1	6d1
Lancaster County Emergency Worker Mon/Decon Center, Mount Joy Fire Department		M		
Dauphin County Shelter Assessment Lenkerville Elementary School			M	
York County Emergency Worker Mon/Decon Center, Dover Borough Fire Department		M		
Adams County Reception/Mass Care/Mon Decon/ Center, Gettysburg High School	M		M	
Cumberland County Reception/Mon/Decon/Mass Care Center, Big Spring High School	M			
Lebanon County Mass Care Center, Cedar Crest High School			M	
Lebanon County Emergency Worker Mon/Decon Center, Annville Fire Department		M		
Cumberland County Reception/Mass Care/ Mon/Decon Center, Big Spring High School	M			
York County Reception/ Mon/Decon/Mass Care Center, Northern High School	M		M	
Lancaster County Reception Center, Park City Mall	M			
Lancaster County Mon/Decon Center, Hempfield High School			M	
Schuylkill County Reception/Mon/Decon/Mass Care Center, Blue Mountain High School	M		M	
Franklin County Reception/Mon/Decon/Mass Care Center, Chambersburg	M		M	
Dauphin County Mass Care Center, Halifax High School			M	
York County Reception/Mon Decon/Mass Care Center, Northern High School	M			

Franklin County Reception/Mon/Decon Center, Chambersburg Middle School South	M			
Lancaster County Mass Care Center, Manheim Township High School			M	
Lebanon County Reception/Mon/Decon Center, County Career Center	M			
Lancaster County Emergency Worker Mon/Decon Center, Mount Joy Fire Department		M		
Dauphin County Emergency Worker Mon/Decon Center, Harrisburg Area Community College		M		
Adams County Shelter Assessment Gettysburg Middle School			M	
Lancaster County Shelter Assessment Cocalico High School			M	
Lancaster County Shelter Assessment Cocalico Middle School			M	
Lancaster County Shelter Assessment Conestoga Valley High School			M	
Lancaster County Shelter Assessment Conestoga Valley Middle School			M	
Lancaster County Shelter Assessment Franklin & Marshal College Field House			M	
Lancaster County Shelter Assessment Warwick High School			M	
Lancaster County Shelter Assessment Warwick Middle School			M	

3.3 Criteria Evaluation Summaries

3.3.1 State Jurisdictions

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

3.3.1.1 Pennsylvania Accident Assessment Center – CRCC – Bureau of Radiation Protection

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

3.3.1.2 Pennsylvania Bureau of Radiation Protection, Radiological Rapid Response Vehicle

- a. Observed: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.1.3 Pennsylvania Commonwealth Response Coordination Center:

- a. Met: 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.d.1, 3. d.2, 5.a.1, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: TWO

Issue One

Location: Pennsylvania Commonwealth Response Coordination Center

Issue No: 64-19-2c1-P-01

Criterion: Protective Action Decisions made for the Protection of persons with disabilities and access/functional needs.

Condition: The PEMA Annex E, Appendix 12, *Response by Schools and Colleges* Plan directs schools in the EPZ to relocate to host schools at a General Emergency (GE).

Possible Cause: A planning oversight could be the cause for the omission of a precautionary relocation of school children to a host school at the Site Area Emergency Level.

Reference: NUREG-0654/ FEMA-REP-1, (D.4; J.9; J.10.d, e), Annex E, Appendix 12, Response by Schools and Colleges

Effect: Delaying the notification of busses for evacuation until the GE and subsequent evacuation of the school in the GE places the students, staff bus drivers and equipment potentially within the plume's path. There are no accommodations in the plan for the monitoring or decontamination of persons or equipment when they would arrive at the Host School. Potentially contaminated students and staff could be released to the general population with no ability to track their movements. Buses could potentially be delayed during their movement in the GE due to traffic. Contaminated busses could potentially be placed back in service to meet additional transportation needs.

Recommendation: Pre-stage transportation busses at schools no later than at the SAE. Evacuate students within the 10-mile EPZ prior to the GE. Provide KI to students and staff if pre-requested. If the evacuation of schools remains in the GE, provide some direction and mechanism to monitor and decontaminate students, staff, bus drivers and equipment. *PEMA submitted adequate plan changes on August 1, 2019 to close this issue.*

Issue Two

Location: Pennsylvania Commonwealth Response Coordination Center

Issue No: 64-19-3a1-P-02

Criterion: Implementation of Emergency Worker Exposure Control

Condition: During the 2019 Three Mile Island Plume Exercise, adequate exposure control equipment was not provided to school bus drivers and transportation dependent bus drivers that would be required to make multiple trips in and out of the EPZ after a General Emergency.

Possible Cause: The Commonwealth of Pennsylvania Annex E of the State Plan does not designate bus drivers as Category A Emergency Workers who therefore would require appropriate dosimetry and KI.

Reference: NUREG-0654/FEMA REP Manual (Planning Standards J.10e, K.3.a, b, K.4); January 2017. Commonwealth of Pennsylvania Interim Radiological Plans Guidance; April 6, 2009. PEMA Three Mile Island Exercise Brief; May 6, 2019. Radiological Emergency Response Plan for West Shore School District; February 19, 2009 (Amended May 6, 2019).

Effect: Bus drivers operating in the EPZ after a General Emergency declaration could receive a radiation dose of unknown amount and equipment such as busses could spread contamination outside the EPZ.

Recommendation: It is recommended that the Commonwealth of Pennsylvania Interim Radiological Plans Guidance be updated to reflect that bus drivers will be considered Category A if dispatched into the EPZ at General Emergency, and dosimetry, KI and training be provided for bus drivers.
PEMA submitted adequate plan changes on August 1, 2019 to close this issue.

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

3.3.1.4 Pennsylvania Joint Information Center/Rumor Control

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

3.3.1.5 Pennsylvania State Field Monitoring Team A, South Central Region

- a. Observed: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.1.6 Pennsylvania State Field Monitoring Team B, South Central Region

- a. Observed: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 4.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.1.7 Pennsylvania State Traffic and Access Control Points, State Police Barracks, Harrisburg

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.d.1, 3. d.2.
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues - Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2 Risk Jurisdictions

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

3.3.2.1 Cumberland County Emergency Operations Center

- 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.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.1 Cumberland County Emergency Worker Monitoring and Decontamination Station, West Shore Borough Fire Station #2

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.2 Cumberland County Mass Care Center, Big Spring High School

- a. Met: 1.d.1, 1.e.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.4 Cumberland County Reception Center/Monitoring and Decontamination Center, Big Spring High School

- a. Met: 1.b.1, 1.c.1, 1.e.1, 3.a.1, 6.a.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.5 Cumberland County, New Cumberland Borough Emergency Operations

Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1, 3.d.2, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE

LOCATION: New Cumberland Brough Emergency Operations Center

ISSUE NO: 64-19-3a1-L2-01

CRITERION: Implementation of Emergency Worker Exposure Control.

CONDITION: The New Cumberland Borough Radiological Officer (RO) was not completely familiar with the details of his position. Direct Reading Dosimeters (DRD) measuring 0-20R were pre-distributed and maintained by the Borough. Likewise, Permanent Record Dosimeters (PRD) and Potassium Iodide (KI) were maintained by the Borough.

The RO was unaware how the importance of the Control PRD, nor how to process it to a location outside the EPZ. The Control PRD provides a baseline for all other PRDs that are maintained in the same location and it must be moved outside the EPZ to ensure a clear starting point for those PRDs distributed to emergency workers. Second, the RO was unaware of the, Commonwealth produced Radiological Briefing DVD did not state, the adult dosage of KI. Appendix 6 of the 2018 edition of the Cumberland County Plan does not mention the amount of KI in a single adult dose. Following the viewing of the DVD, the RO could not provide the emergency workers proper dose to ingest, was 130mg, or two 65mg tablets. The RO did not use a checklist, solely relying on the DVD to provide the relevant critical information. Third, the EOC is located within the 10-mile EPZ, all EOC staff are emergency workers. The RO did not have complete Category B dosimeter coverage in place during the time the workers were present in the EOC. Category B coverage consists of one PRD per worker, an issue of KI to each worker, and because the EOC is an area used by several personnel remaining in a single location, there are two 0-20R DRDs to alert to the possible increase in radiation levels. Each worker in the EOC had a PRD and an issue of KI tablets, but the DRDs were not being used.

POSSIBLE CAUSE: This is likely due to a lack of critical position knowledge by the RO, compounded by the fact the State produced Radiological Briefing DVD does not mention the KI dosage, and, Appendix 6 of the County Plan does not address such critical information.

REFERENCE: (NUREG-0654/FEMA-REP-1, J.10.e; K.3.a, b; K.4

EFFECT: There is a potential for emergency workers to not be fully protected in the EPZ. This was specifically identified when the two Fire Department personnel performing back-up route alerting were questioned, and they were

unable to state the dosage amount they would ingest when authorized to take KI.

All EOC staff were issued a PRD and KI, however, without 0-20R DRDs being used, there was no means of monitoring increasing radiation levels if a plume was to have covered the EOC. Thus, the emergency workers in the EOC were not protected.

RECOMMENDATION: The Cumberland County RO should conduct in depth training for the New Cumberland Borough Volunteer Fire Department (FD) as a whole. The Borough RO was a member of the FD, however, there is no guarantee this individual would be available for the next event. This corrective action could provide a pool of individuals able to perform the duties of the RO. The Commonwealth of Pennsylvania should redo the DVD, so it clearly states the dosages of KI, specifically, the adult dose of 2-65mg KI tablets, or a total dose of 130mg. This is very important if the DVD is to be the primary/only method of conducting an emergency worker radiation protection briefing. The Borough RO should use a checklist to ensure all pertinent information is briefed, not solely relying on the incomplete DVD to provide 100% of the critical information. *On July 29, 2019 the L2 3.a.1 issue was successfully re-demonstrated.*

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

3.3.2.6 Cumberland County, New Cumberland Borough Traffic and Access Control

- a. Met: 1.d.1, 1.e.1, 3.a.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.7 Cumberland County New Cumberland Borough, Back-up Route Alerting

- a. Met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.8 Dauphin County Emergency Operations Center

- 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.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.9 Dauphin County Emergency Worker Monitoring and Decontamination Station, Harrisburg Area Community College

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.10 Dauphin County Shelter Assessment, Lenkerville Elementary School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.11 Dauphin County Mass Care Center, Halifax High School

- a. Met: 1.d.1, 1.e.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.12 Dauphin County, Central Dauphin School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.13 Dauphin County, Central Dauphin School District, Central Dauphin Lawton Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.14 Dauphin County, Central Dauphin School District, Paxtang Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE

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

3.3.2.15 Dauphin County, Central Dauphin School District, South Side Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.16 Dauphin County, Derry Township Emergency Operations Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3. d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.17 Dauphin County, Derry Township School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.18 Dauphin County, Derry Township School District, Early Childhood Center

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.19 Dauphin County, Milton Hershey School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.20 Dauphin County, Harrisburg School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.21 Dauphin County, Harrisburg School District, Foose Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.22 Dauphin County, Hummelstown Borough Emergency Operations Center

- a. Met: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.23 Dauphin County, Hummelstown Borough Lower Dauphin School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.24 Dauphin County, Lower Dauphin School District, Conewago Township Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.25 Dauphin County, Lower Dauphin School District, Nye Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.26 Dauphin County, Lower Swatara Township Emergency Operations Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.27 Dauphin County, Middletown Borough Emergency Operations Center

- a. Met: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.28 Dauphin County, Middletown Borough, Middletown Area School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.29 Dauphin County, Middletown Area School District, John C. Kunkel Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.30 Dauphin County, Royaltown Borough Emergency Operations Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.31 Dauphin County, Steelton Borough Emergency Operations Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE

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

3.3.2.32 Dauphin County, Swatara Township Emergency Operations Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1, 3.d.2, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.33 Dauphin County, Steelton-Highspire School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.34 Dauphin County, Steelton-Highspire School District, Steelton-Highspire High School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.35 Dauphin County, Sylvan Charter School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.36 Dauphin County, Swatara Township Backup Route Alerting

- a. Met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.37 Dauphin County, Swatara Township Traffic and Access Control

- a. Met: 1.d.1, 1.e.1, 3.a.1, 3.d.1
- b. Level 1 Findings: NONE

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

3.3.2.38 Lancaster County Emergency Operations Center

- 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.d.1, 3.d.2, 5.a.1, 5.a.3,5. b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.39 Lancaster County Emergency Worker Monitoring and Decontamination Station, Mount Joy Fire Department

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.40 Lancaster County Mass Care Center, Manheim High School

- a. Met: 1.d.1, 1.e.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.41 Lancaster County Mass Care Center, Cocalico High School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.42 Lancaster County Shelter Assessment, Cocalico Middle School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.43 Lancaster County Shelter Assessment, Conestoga High School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.44 Lancaster County Shelter Assessment, Conestoga Middle School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.45 Lancaster County Shelter Assessment, Franklin & Marshall College

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.46 Lancaster County Shelter Assessment, Manheim Township High School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.47 Lancaster County Shelter Assessment, Warwick High School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.48 Lancaster County Shelter Assessment, Warwick Middle School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.49 Lancaster County Monitoring and Decontamination Center, Hempfield High School

- a. Met: 1.c.1, 1.e.1, 3.a.1, 6.a.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.50 Lancaster County Reception Center, Park City Mall

- a. Met: 1.d.1, 1.e.1, 3.a.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.51 Lancaster County, Conoy Township Back-up Route Alerting

- a. Met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.52 Lancaster County, Conoy Township Emergency Operation Center

- a. Met: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.53 Lancaster County, Conoy Township Traffic and Access Control, Northwest Regional Police Department

- a. Met: 1.d.1, 1.e.1, 3.a.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.54 Lancaster County, Elizabethtown Borough/W. Donegal Twp/Mt. Joy Twp Emergency Operation Center

- a. Met: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE

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

3.3.2.55 Lancaster County, Elizabethtown Area School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.56 Lancaster County, Elizabethtown Area School District, Bainbridge Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.57 Lancaster County, Elizabethtown Area School District, Bear Creek Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.58 Lancaster County, Elizabethtown Area School District, Mill Road Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.59 Lebanon County Emergency Operations Center

- 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.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.60 Lebanon County Emergency Worker Monitoring and Decontamination Station, Annville Fire Department

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.61 Lebanon County Reception Center/Monitoring and Decontamination Center, Lebanon County Career & Tech Center

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.a.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.62 Lebanon County Mass Care Center, Cedar Crest High School

- a. Met: 1.d.1, 1.e.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.63 Lebanon County, South Londonderry Township Backup Route Alerting

- a. Met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.64 Lebanon County, South Londonderry Township Emergency Operation Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.65 Lebanon County, South Londonderry Township Traffic and Access Control, South Londonderry Police Department

- a. Met: 1.d.1, 1.e.1, 3.a.1, 3.d.1
- b. Level 1 Findings: NONE

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

3.3.2.66 York County Emergency Operations Center

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

3.3.2.67 York County Emergency Worker Monitoring and Decontamination Station, Dover Borough Fire Department

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.68 York County Mass Care/Reception Center/Monitoring and Decontamination Center, Northern High School

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.a.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.69 York County, Fairview Township Backup Route Alerting

- a. Met: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 5.a.3
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.70 York County, Fairview Township Emergency Operation Center

- a. Met: 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.71 York County, Fairview Township Traffic and Access Control, Fairview Township Police Department

- a. Met: 1.d.1, 1.e.1, 3.a.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.72 York County, West Shore School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE

Location: York County, Fairview Township, West Shore School District

Issue No: 64-19-3c2-P-03

Criterion: OROs implement precautionary/protective actions for schools.

Condition: During the 2019 Three Mile Island Plume Exercise, adequate provisions and direction were not made in the District plan to ensure that evacuation was underway prior to General Emergency, and that school bus drivers that would not be required to make multiple trips in and out of the EPZ after a General Emergency.

Possible Cause: The West Shore School District Radiological Emergency Response Plan provides for the consideration of evacuation at Alert and Site Area Emergency but does not specifically direct actions. Site Area Emergency was received by the district at 0950. After discussion with the staff, evacuation was directed at 1012, but would require two trips of available buses. General Emergency, declared by Three Mile Island at 1010, was received by the district at 1023. Ambiguity in the plan for consideration of evacuation vice direction of evacuation at Site Area Emergency, combined with the need for two trips, created a time delay causing evacuation extending into the General Emergency phase.

Reference: NUREG 0654/FEMA REP Manual Planning Standards J.10 c, d, e, g), Commonwealth of Pennsylvania Interim Radiological Plans Guidance; April 6, 2009, PEMA Three Mile Island Exercise Brief; May 6, 2019, Radiological Emergency Response Plan for West Shore School District; February 19, 2009 (Amended May 6, 2019).

Effect: Time delay of evacuation at Site Area Emergency and need for two trips may cause bus drivers and students to be present in the plume during a General Emergency with release.

Recommendation: Pre-incident coordination/Memorandums of Understanding with other transportation providers to support full evacuation in one trip. Plans be revised to specifically direct staging for evacuation at Alert, with implementation of evacuation at Site Area Emergency. *Appropriate plan changes were submitted by York County Emergency Management Agency on June 24, 2019.*

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

3.3.2.73 York County, West Shore School District, Cross Roads Middle School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.74 York County, West Shore School District, Fairview Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.75 York County, Fairview Township, West Shore School District, Hillside Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.76 York County, Goldsboro Borough Emergency Operation Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.c.2, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.77 York County, Northeastern School District

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE

Location: York County, Manchester Borough, Northeastern School District

Issue No: 64-19-3c2-P-04

Criterion: OROs implement precautionary/protective actions for schools.

Condition: The Northeastern School District Annex E of the Radiological Emergency Response Plan for Three Mile Island Nuclear Generating Station does not address adequate protective measures concerning evacuation for school children and staff at an Emergency Classification Level (ECL) that would prevent the potential for increased exposure from a release during a nuclear power plant accident.

Possible Cause: In accordance with Northeastern School District Annex E of the Radiological Emergency Response Plan for Three Mile Island Nuclear Generating Station Paragraph 5 (D) General Emergency subparagraph b and d, which states that principals and staff will be alerted to prepare for evacuation and d, evacuate risk schools when an evacuation is ordered in addition to Paragraph 6 (E) Director of Physical Plant subparagraph c. which states after the school building has been evacuated, school building custodians will search buildings to ensure that there are no stragglers.

Reference: NUREG-0654/FEMA-REP-1 J.10. d, e, f, g

Effect: Evacuating schools at the General Emergency (GE) will place children and staff at a greater risk of exposure during a release of radiation. In addition, the potential for time delays in moving children and staff on buses to the host school exist with the possibility of traffic congestion on evacuation routes thereby creating additional concerns for increased exposure. Although Potassium Iodide (KI) is available for students at Northeastern School District Risk Schools and issued at Site Area Emergency, the timeliness of administering KI to school children may be delayed due to the decision to ingest KI is made at General Emergency and the movement of school children not taking place until General Emergency which doesn't afford ample time to monitor ingestion of KI while simultaneously evacuating school children. Other factors within the plan create the potential for increased risk of exposure such as bus drivers working within the Emergency Planning Zone (EPZ) in a mobile capacity during an evacuation that are not issued adequate dosimetry afforded to other Category "A" emergency workers in addition to school custodians that are required to remain at the risk schools following evacuation for the purpose of clearing schools of any remaining students or personnel. In addition, the School District administrative office is located within the EPZ.

Recommendation: The School District Plan should include the following: The precautionary relocation of school children to a host school should be implemented at the Site Area Emergency. School custodians should clear schools of any remaining students and staff following the relocation of the

school children at Site Area Emergency. School bus mobilization should begin at the Alert. Identify the process of when and how KI will be distributed to school children by the school nurse for those risk schools that provide it to include proper dosage (130 mg for adults, 65 mg for children ages 3 to 18). Identify bus provider, total numbers of buses per risk school, and bus routes. Identify total number of students and staff per risk school along with identifying total numbers of children living inside the Emergency Planning Zone (EPZ) for each risk school. *Appropriate plan changes were submitted by York County Emergency Management Agency on June 24, 2019.*

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

3.3.2.78 York County, Northeastern School District, Conewago Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.79 York County, Northeastern School District, Mount Wolf Elementary School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.80 York County, Newberry Regional EMA/ Lewisberry Borough/Newberry Township/York Haven Borough Emergency Operation Center

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

3.3.2.81 Northern York EMA/Warrington Township Emergency Operation Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.c.1, 3.d.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.2.82 York County, Central York School District, Hillside

- a. MET: 3.c.2

- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE

Location: York County, Springettsbury Township, Central York School District

Issue No: 64-19-3c2-P-05

Criterion: OROs implement precautionary/protective actions for schools.

Condition: Plan does not provide sufficient time to stage bus transportation and evacuation during the General Emergency. There are no contingencies for Monitoring and Decon of busses, student and staff who could potentially become contaminated during the GE. No KI available.

Possible Cause: Inadequate plan directions and timing. Plan does not adequately provide protection for students, school staff, bus drivers or equipment

Reference: NUREG-0654/FEMA-REP-1 J.10. d, e, f, g, Transportation XII TMINGS Response Plan (1/19), VI- Concept of Operations, Part D GE, Line 3- Direct Bus Contractors to Have Busses Report to Assigned School

Effect: Delaying the notification of busses for evacuation until the GE and subsequent evacuation of the school in the GE places the students, staff bus drivers and equipment potentially within the plume's path. There are no accommodations in the plan for the monitoring or decontaminate of persons or equipment when they would arrive at the Host School. Potentially contaminated students and staff could be released to the general population with no ability to track their movements. Buses could potentially be delayed during their movement in the GE due to traffic. Contaminated busses could potentially be placed back in service to meet additional transportation needs.

Recommendation: Pre-stage transportation busses at schools during the SAE. Evacuate students within the 10-mile EPZ prior to the GE to monitor and decon. Provide Bus Drivers with Dosimetry and KI Provide KI to students and staff if pre-requested. If the evacuation of schools remains in the GE, provide some direction and mechanism to monitor and decontaminate students, staff, bus drivers and equipment prior to release and the repurposing of equipment.

Appropriate plan changes were submitted by York County Emergency Management Agency on June 24, 2019.

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

3.3.2.83 York County, Northeastern School District, Central York High School

- a. Met: 3.c.2
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE

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

3.3.3 Support Jurisdictions

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

3.3.3.1 Adams County Emergency Operations Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.3.2 Adams County Mass Care/Reception Center/Monitoring and Decontamination Center, Gettysburg High School

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.a.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.3.3 Adams County Shelter Assessment, Gettysburg Middle School

- a. Met: 1.b.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.3.4 Franklin County, Emergency Operation Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.3.5 Franklin County Mass Care/Reception Center/Monitoring and Decontamination Center, Chambersburg Middle School

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.a.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE

- f. Prior Issues - Unresolved: NONE

3.3.3.6 Schuylkill County, Emergency Operation Center

- a. Met: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.3.7 Schuylkill County Mass Care/Reception Center/Monitoring and Decontamination Center, Blue Mountain High School

- a. Met: 1.c.1, 1.d.1, 1.e.1, 3.a.1, 6.a.1, 6.c.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

3.3.1 Private Jurisdictions

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

3.3.4.1 Exelon Emergency Operations Facility

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

3.3.4.2 Exelon Joint Information Center

- a. Met: 1.d.1, 1.e.1, 5.b.1
- b. Level 1 Findings: NONE
- c. Level 2 Findings: NONE
- d. Plan Issues: NONE
- e. Prior Issues – Resolved: NONE
- f. Prior Issues - Unresolved: NONE

SECTION 4: DEMONSTRATED STRENGTHS

4.1 State Jurisdictions

4.1.1 Pennsylvania Accident Assessment Center – CRCC- Bureau Rad Protection

Accident Assessment Center tracking wind direction, probes and field monitoring teams' locations to ensure resources were in effective locations to track the plume.

4.1.2 Pennsylvania Commonwealth Response Coordination Center

Outstanding briefing to the evaluators by the State Radiological Officer of PEMA's dosimetry and KI inspection, inventory, and issuance procedures.

The Joint Information Center Manager and her staff did an outstanding job. The rumor control/public inquiry staff were very efficient in their role.

Protective action decision making was collaborative with ample opportunity for each jurisdiction and agency to express any concerns or reservations, without delaying the final decision.

4.2 Risk Jurisdictions

4.2.1 Cumberland County Emergency Operations Center

Strong collaboration and coordination of information between departments/sections with the EOC.

4.2.2 Dauphin County Central Dauphin School District

The Central Dauphin School District were all knowledgeable and proactive in successfully demonstrating their assigned criterions with in their emergency response organizations.

The Superintendent and staff utilized their position books and followed their plans, procedures and checklists accordingly.

Staff members were fully engaged and worked well together while demonstrating and displaying caring attitudes and concerns for the students, teachers, parents and bus drivers.

4.2.3 Dauphin County, Harrisburg City, Harrisburg School District

The Student Services Supervisor did an outstanding job with their coordination calls to Foose Elementary School officials and Dauphin County EMC throughout the drill.

4.2.4 Dauphin County, Mass Care Center, Halifax High School

The American Red Cross personnel were knowledgeable of their duties and paid attention to the details involved in the setup of the mass care facility.

4.2.5 Dauphin County, Middletown Borough, Emergency Operations Center

The Emergency Management Coordinator was quite knowledgeable and provided timely direction to members of the Middletown Borough EOC. The Radiological Officer gave an in depth briefing and utilized real life experiences to get his points across to members of the EOC.

4.2.6 Dauphin County, Steelton Borough, Emergency Operations Center

The Deputy Emergency Management Coordinator served as a very strong EOC Lead throughout the event.

4.2.7 Lancaster County Emergency Operations Center

As a redundant system to route alerting for siren failure, the Lancaster County EOC Ops section has populated text, email, and phone data within the Everbridge System and it is geocoded by location.

4.2.8 Lancaster County Emergency Worker Monitoring and Decontamination Station, Mount Joy Fire Department

Excellent use of procedures and job aides. Displayed excellent teamwork and use of peer checks. Very organized and knowledgeable in their duties

4.2.9 Lancaster County, Conoy Township, Emergency Operations Center

Working within the imposed time constraints, staff remained focused in completing assigned tasks

4.2.10 Lancaster County Monitoring and Decontamination Center, Chambersburg Middle School

The Hempfield High School Evacuee Monitoring and Decontamination Center Coordinator was knowledgeable and resolved emerging issues in a timely manner. The Hempfield High School Evacuee Monitoring and Decontamination Center utilized well thought out job aids that were posted at every station of the operation.

4.2.11 Lebanon County Emergency Operations Center

Emergency Management Coordinator; EOC Director; and EOC Manager for their seamless coordination and leadership they were well versed in their emergency operation plans, procedures, and had confidence in their EOC staff. Excellent teamwork. Great situational awareness with the GIS map displayed on one of the large wall monitors. It had many custom-built TMINGS layers. Productive agriculture discussions took place with the Lebanon EOC staff members, resulting in a request to the State to implement a protective action decision to shelter in place all feed and milk trucks in the affected area.

4.2.12 Lebanon County Emergency Worker Monitoring and Decontamination Station, Annville Fire Department

The HazMat Team Lead had strong command and control of the facility and maintained strict adherence to the facility procedures

4.2.13 Lebanon County Mass Care, Cedar Crest High School

ARC Mass Center Manager was extremely well versed regarding the processing and registration of evacuees. Radio staff set up a permanent antenna at high school to be used in emergencies.

4.2.14 Lebanon County, South Londonderry Township, Emergency Operations Center

Set up a brand new, never been used communication center in short order. No cables or antenna for County radio network or ARES/RACES radios had been installed. WLCREMA and amateur radio club members overcame that problem in under 30 minutes. Use of a printed ICS Incident Action Plan enabled everyone to know what the objectives were, who had what assignment, how they would communicate and what to do in case of a medical emergency. Backup route alerting was quick and efficient.

4.2.15 York County, Newberry Regional EMA/Lewisberry Borough/Newberry Township/York Haven Borough, Emergency Operations Center

The Emergency Operations Center was sized for possible future expansion of the Emergency Response Organization.

The Emergency Response Organization were all knowledgeable of their assigned tasks and worked well together.

4.2.16 York County, West Shore School District

West Shore School District demonstrated exemplary procedures for incident management and minimized simulations within the exercise. Fully staffed and equipped EOC; with a designated COOP location outside the EPZ; did not simulate any communications and demonstrated high proficiency in use of WebEOC and district systems for incident management and notifications and warnings to staff and parents.

4.3 Support Jurisdictions

4.3.1 Franklin County Emergency Operations Center

The Franklin County EOC consisted of key individuals from several organizations. They all worked together seamlessly in responding to their mission, objectives, and activities at the EOC. Their high levels of competency and commitment were very impressive.

4.3.2 Franklin County Mass Care/Reception Center/Monitoring and Decontamination Center, Chambersburg Middle School

Red Cross representative was very knowledgeable about procedures. Registration of evacuees was thorough and efficient.

4.3.3 Schuylkill County Emergency Operations Center

Very knowledgeable and well prepared for duties and responsibilities of a Support County. Staff is well versed and trained in radiological procedures and equipment.

4.3.4 Schuylkill County Monitoring and Decontamination Center, Blue Mountain High School

The firefighter that conducted the secondary monitoring of the simulated contaminated evacuee, verbalized his technique and survey readings in a clear and detailed manner.

SECTION 5: CONCLUSION

The Commonwealth of Pennsylvania and local jurisdictions, except where noted in this report demonstrated knowledge of their Radiological Emergency Response Plans (RERP) and procedures were adequately implemented during the Three Mile Island Nuclear Generating Station Plume Pathway exercise evaluated on May 7, 2019.

Federal Emergency Management Agency (FEMA) evaluators assessed 392 evaluation criteria in six Assessment Areas:

- Evaluation Area 1: Emergency Operations Management
- Evaluation Area 2: Protective Action Decision Making
- Evaluation Area 3: Protective Action Implementation
- Evaluation Area 4: Field Measurement and Analysis
- Evaluation Area 5: Emergency Notification and Public Information
- Evaluation Area 6: Support Operation/Facilities

These analyses resulted in a determination of no Level 1 Findings, one Level 2 Findings, and five new Plan Issues.

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

An After-Action Improvement Plan (IP) will be developed as part of this report.

TMINGS APPENDIX A – EXERCISE TIMELINE

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

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received at the Listed Location								
		Commonwealth of PA (CRCC)	PA JIC (CRCC)	PA (BRP)	Exelon EOF/JIC	Cumberland County EOC	New Cumberland Borough EOC	Dauphin County EOC	Derry Township EOC	Hummelstown Borough EOC
Unusual Event	1611	1634	1634	1634	1611	1635	N/A	1622	1713	N/A
Alert	1650	1712	1712	1712	1657/1650	1703	1725	1657	1721	1704
Site Area Emergency	1750	1757	1805	1805	1801/1750	1805	1805	1805	1805	1805
General Emergency	1855	1915	1915	1915	1912/1855	1915	1932	1904	1917	1915
Simulated Radiation Release Started	1750	1757	1815	1815	1815/1756	1830	1830	1830	1830	1830
Simulated Radiation Release Terminated	N/A	1945	1945	1945	1917/1925	1945	1945	1945	1945	1945
Facility Declared Operational		1730	1730	1730	1749/1738	1809	1750	1711	1740	1708
Governor's Declaration of State of Emergency		1835	1835	1835	1853/1835	1843	1857	1839	1850	1843
Exercise Terminated		2041	2041	2041	2045/2015	2035	2035	2031	2023	1956
First Precautionary/Protective Action										
Describe Livestock on stored feed and Water		1824	1824	1824	1826/1842	1837	1841	1836	1824	1921
10-mile waterway restriction;		1822	1822	1822	1822/1822	1832	1832	1832	1830	1832
Air 0-2 mile, 2000		1825	1825	1825	1825/1825	1825	1825	1829	1830	1825
10-mile rail restriction		1822	1822	1822	1822/1842	1825	1825	1829	1830	1830
Siren Sounding		1822	1822	1822	1822/1822	1822	1822	1822	1822	1822
EAS Broadcast		1825	1825	1825	1825/1825	1825	1825	1825	1825	1825
Second Precautionary/ Protective Action: Describe										
Evacuate 10 mi /all sectors		1924	1924	1924	1924/1925	1932	1934	1924	1934	1934
Siren Sounding		1934	1934	1934	1934/1934	1934	1934	1934	1934	1934
EAS Message Broadcast		1937	1937	1937	1937/1937	1937	1937	1937	1934	1937
Decision to take KI: EWs		1924	1924	1924	1924/1925	1932	2004	1924	1934	1928
Decision to take KI: Public		1924	1924	1924	1924/1925	1932	2004	1924	1934	1934

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received at the Listed Location								
		Lower Swatara Township EOC	Middletown Borough EOC	Royalton Borough EOC	Steelton Borough EOC	Swatara Township EOC	Lancaster County EOC	Conoy Township EOC	Elizabethtown Borough/W.Donegal Twp/Mt JoyTwp EOC	Lebanon County EOC
Unusual Event	1611	1636	N/A	N/A	N/A	N/A	1643	N/A	N/A	1638
Alert	1650	1704	1705	1704	1705	1704	1723	1723	1723	1703
Site Area Emergency	1750	1811	1826	1818	1807	1809	1813	1805	1817	1809
General Emergency	1855	1915	1916	1918	1915	1914	1938	1855	1942	1924
Simulated Radiation Release Started	1750	1809	1934	1818	1804	1809	1817	1915	1752	1924
Simulated Radiation Release Terminated	N/A	1945	1945	1945	1945	1945	1945	1945	1945	1945
Facility Declared Operational		1724	1811	1734	1722	1715	1718	1810	1841	1703
Governor's Declaration of State of Emergency		1857	1857	1844	1840	1850	1839	1835	1842	1858
Exercise Terminated		2008	2032	2032	2015	2030	2038	2004	2027	2010
First Precautionary/Protective Action										
Livestock on stored feed and Water		1838	1838	1838	1838	1840	1836	1835	1842	1840
10-mile waterway restriction		1822	1825	1842	1838	1838	1832	1835	1837	1838
Air 0-2, 2000		1825	1825	1849	1829	1838	1833	1835	1837	1845
10-mile rail restriction		1850	1825	1842	1836	1838	1832	1822	1837	1845
Siren Sounding		1822	1822	1822	1822	1822	1822	1822	1822	1822
EAS Broadcast		1825	1825	1825	1825	1825	1825	1825	1825	1825
Second Precautionary/ Protective Action: Describe										
Evacuate 10 mi /all sectors		1937	1936	1935	1932	1934	1934	1935	1942	1929
Siren Sounding		1934	1934	1934	1934	1934	1934	1934	1934	1934
EAS Message Broadcast		1937	1937	1937	1937	1937	1937	1937	1937	1937
Decision to take KI: EWs		1935	1934	1948	1952	1936	1934	1945	1945	1937
Decision to take KI: Public		1937	1934	1948	1952	1936	1934	1945	1945	1937

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received at the Listed Location					
		South Londonderry Township EOC	York County EOC	Fairview Township EOC	Goldsboro Borough EOC	Newberry Region EMA - Lewisberry Borough/ Newberry Township/ York Haven Borough EOC	Northern York EMA/ Warrington Township EOC
Unusual Event	1611	1642	1622	1642	1611	N/A	N/A
Alert	1650	1705	1658	1711	1700	1713	N/A
Site Area Emergency	1750	1815	1800	1807	1806	1806	1807
General Emergency	1855	1930	1907	1915	1914	1914	1915
Simulated Radiation Release Started	1750	1838	1800	1923	1845	1919	1920
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1724	1718	1715	1739	1929	1750
Governor's Declaration of State of Emergency		1900	1835	1928	1841	1840	1849
Exercise Terminated		2012	2028	2026	2033	2020	2026
First Precautionary/Protective Action							
Livestock on stored feed and Water		1900	1830	N/A	1850	1907	1849
10-mile waterway restriction;		1900	1830	1842	1850	1849	1822
Air 0-2, 2000		1900	1830	1842	1850	1825	1849
10-mile rail restriction		1900	1830	1842	1850	1849	1849
Siren Sounding		1822	1822	1822	1822	1822	1822
EAS Broadcast time		1825	1825	1825	1825	1825	1825
Second Precautionary/ Protective Action: Describe							
Evacuate 10 mi /all sectors		1930	1924	1934	1936	1930	1931
Siren Sounding		1934	1934	1934	1934	1934	1934
EAS Message Broadcast		1937	1937	1937	1937	1937	1937
Decision to take KI: EWs		1930	1924	1934	1929	1930	1931
Decision to take KI: Public		1930	1924	1934	1929	1928	1947

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received at the Listed Location							
		Adams County EOC	Franklin County EOC	Schuylkill County EOC					
Unusual Event	1611	1650	1634	1605					
Alert	1650	1715	1712	1654					
Site Area Emergency	1750	1820	1815	1807					
General Emergency	1855	1949	1915	1922					
Simulated Radiation Release Started	1750	1958	1805	1922					
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A					
Facility Declared Operational		1820	1600	1640					
Governor's Declaration of State of Emergency		1835	1846	1845					
Exercise Terminated		2024	2021	N/A					
First Precautionary/Protective Action:									
Describe Livestock on stored feed and Water		1829	1825	1829					
10-mile waterway restriction;		1829	1822	1829					
Air 5-mile 5000		1829	1825	1829					
10-mile rail restriction		1825	1851	1829					
Siren Sounding		1822	1822	1822					
EAS Broadcast time		1825	1825	1825					
Second Precautionary/Protective Actions: Describe									
Siren Sounding		1934	1934	1934					
EAS Message Broadcast		1937	1937	1937					
Decision to take KI: EWs		1937	1926	1937					
Decision to take KI: Public		1937	1937	1937					

APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Evaluators and Team Leaders for the Three Mile Island Nuclear Station 2019 Radiological Emergency Preparedness Plume Exposure Pathway Exercise evaluated on May 7, 2019. The following constitutes the managing staff for the Exercise Evaluation:

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

Three Mile Island Nuclear Generating Station

LOCATION	TEAM LEADER	AGENCY
Adams County Emergency Operations Center	Brad DeKorte	FEMA Region 6
Adams County Reception/Mon/Decon Center, Gettysburg High School	Mike Howe	FEMA HQ
Adams County Mass Care Center, Gettysburg High School	Jeff Clark	FEMA Region 7
Adams County Shelter Assessment, Gettysburg High School	Joe Suders	FEMA Region 3
Cumberland County Emergency Operations Center	Tina Lai-Thomas	FEMA Region 3
Cumberland County Emergency Worker Mon/Decon Station, Westshore Bureau of Fire Station	Mike Howe	FEMA HQ
Cumberland County Mass Care Center	Jeff Clark	FEMA Region 7
Cumberland County Reception Center/Mon/Decon Center, Big Spring High School	Mike Howe	FEMA HQ
Cumberland County, New Cumberland Borough Back-up Route Alerting	Tina Lai-Thomas	FEMA Region 3
Cumberland County, New Cumberland Borough Emergency Operations Center	Tina Lai-Thomas	FEMA Region 3
Cumberland County, New Cumberland Borough Traffic and Access Control	Tina Lai-Thomas	FEMA Region 3
Dauphin County Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County Emergency Worker Mon/Decon Station, Harrisburg Area Community College	Mike Howe	FEMA HQ
Dauphin County Mass Care Center, Halifax High School	Jeff Clark	FEMA Region 3
Dauphin County Shelter Assessment Lenkerville Elementary School	Joe Suders	FEMA Region 3
Dauphin County, Central Dauphin School District	John Rice	FEMA Region 1
Dauphin County, Central Dauphin School District, Lawton Elementary School	John Rice	FEMA Region 1
Dauphin County, Central Dauphin School District, Paxtang Elementary School	John Rice	FEMA Region 1
Dauphin County, Central Dauphin School District, South Side Elementary School	John Rice	FEMA Region 1
Dauphin County, Derry Township Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County, Derry Township School District	John Rice	FEMA Region 1
Dauphin County, Derry Township School District, Early Childhood Center	John Rice	FEMA Region 1
Dauphin County, Derry Township, Milton Hershey School District	John Rice	FEMA Region 1

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Dauphin County, Derry Township, Milton Hershey School	John Rice	FEMA Region 1
Dauphin County, Harrisburg City, Harrisburg School District	John Rice	FEMA Region 1
Dauphin County, Harrisburg School District, Foose Elementary School	John Rice	FEMA Region 1
Dauphin County, Hummelstown Borough Emergency Operations Center	John Rice	FEMA Region 1
Dauphin County, Hummelstown Borough Lower Dauphin School District	John Rice	FEMA Region 1
Dauphin County, Lower Dauphin School District, Conewago Elementary School	John Rice	FEMA Region 1
Dauphin County, Lower Dauphin School District, Nye Elementary School	John Rice	FEMA Region 1
Dauphin County, Lower Swatara Township, Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County, Middletown Borough, Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County, Middletown Borough, Middletown Area School District	John Rice	FEMA Region 1
Dauphin County, Middletown Borough, Middletown Area School District, John C. Kunkel Elementary School	John Rice	FEMA Region 1
Dauphin County, Royalton Borough, Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County, Steelton Borough, Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County, Swatara Township, Back-up Route Alerting	Lee Torres	FEMA Region 3
Dauphin County, Swatara Township, Emergency Operations Center	Lee Torres	FEMA Region 3
Dauphin County, Swatara Township, Traffic and Access Control	Lee Torres	FEMA Region 3
Dauphin County, Swatara Township, Steelton-Highspire School District	John Rice	FEMA Region 1
Dauphin County, Swatara Township, Steelton-Highspire School District, Steelton-Highspire High School	John Rice	FEMA Region 1
Dauphin County, Swatara Township, Steelton-Highspire School District, Sylvan Heights Charter School	John Rice	FEMA Region 1
Exelon Emergency Operations Facility and Technical Support Center	Mike Howe	FEMA HQ
Exelon Emergency Operations Facility	Mike Howe	FEMA HQ
Exelon Joint Information Center	Joe Suders	FEMA Region 3
Franklin County Emergency Operations Center	Brad DeKorte	FEMA Region 6
Franklin County Mass Care Center, Chambersburg Middle School South	Jeff Clark	FEMA Region 7
Franklin County Mon/Decon Center, Chambersburg Middle School, South	Mike Howe	FEMA HQ
Lancaster County Emergency Operations Center	Chris Nemcheck	FEMA Region 3
Lancaster County Emergency Worker Mon/Decon Station, Mount Joy Fire Department	Mike Howe	FEMA HQ
Lancaster County Mass Care Center, Cocalico High School	Joe Suders	FEMA Region 3
Lancaster County Mass Care Center, Cocalico Middle School	Joe Suders	FEMA Region 3
Lancaster County Mass Care Center, Conestoga Valley High School	Joe Suders	FEMA Region 3

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

Lancaster County Mass Care Center, Conestoga Valley Middle School	Joe Suders	FEMA Region 3
Lancaster County Mass Care Center, Franklin & Marshal College	Joe Suders	FEMA Region 3
Lancaster County Mass Care Center, Manheim Township High	Jeff Clark	FEMA Region 7
Lancaster County Shelter Assessment, Warwick High School	Joe Suders	FEMA Region 3
Lancaster County Shelter Assessment, Warwick Middle School	Joe Suders	FEMA Region 3
Lancaster County Monitoring and Decontamination Center, Hempfield High School	Mike Howe	FEMA HQ
Lancaster County Reception Center, Park City Mall	Jeff Clark	FEMA Region 7
Lancaster County, Conoy Township Back-up Route Alerting	Chris Nemcheck	FEMA Region 3
Lancaster County, Conoy Township, Emergency Operations Center	Chris Nemcheck	FEMA Region 3
Lancaster County, Conoy Township, Traffic and Access Control Points	Chris Nemcheck	FEMA Region 3
Lancaster County, Elizabethtown Borough/W. Donegal Township/ Mount Joy Township, Emergency Operations Center	Chris Nemcheck	FEMA Region 3
Lancaster County, Elizabethtown Borough, Elizabethtown Area School District	John Rice	FEMA Region 1
Lancaster County, Elizabethtown Borough, Elizabethtown Area School District, Bainbridge Elementary School	John Rice	FEMA Region 1
Lancaster County, Elizabethtown Borough, Elizabethtown Area School District, Bear Creek Elementary School	John Rice	FEMA Region 1
Lancaster County, Elizabethtown Borough, Elizabethtown Area School District, Mill Road Elementary School	John Rice	FEMA Region 1
Lebanon County Emergency Operations Center	Kathy Duran	FEMA Region 1
Lebanon County Emergency Worker Monitoring & Decontamination Station, County Career and Technical Center	Mike Howe	FEMA HQ
Lebanon County Mass Care Center, Cedar Crest High School	Jeff Clark	FEMA Region 7
Lebanon County Reception Center/Mon/Decon Center, Lebanon County Career & Technical Center	Mike Howe	FEMA HQ
Lebanon County, South Londonderry Township, Back-Up Route Alerting	Kathy Duran	FEMA Region 3
Lebanon County, South Londonderry Township Emergency Operations Center	Kathy Duran	FEMA Region 3
Lebanon County, South Londonderry Township Traffic and Access Control	Kathy Duran	FEMA Region 3
PA State Field Monitoring Team A, South Central Region	Mike Howe	FEMA HQ
PA State Field Monitoring Team B, South Central Region	Mike Howe	FEMA HQ
Pennsylvania Accident Assessment Center, CRCC-Bureau Rad Protection	Mike Howe	FEMA HQ
Pennsylvania Bureau of Radiation Protection, Radiological Rapid Response Vehicle	Mike Howe	FEMA HQ
Pennsylvania Commonwealth Response Coordination Center	Joe Suders	FEMA Region 3
Pennsylvania Joint Information Center/Rumor Control	Joe Suders	FEMA Region 3
Pennsylvania State Traffic and Access Control Points	Joe Suders	FEMA Region 3
Schuylkill County Emergency Operations Center	Brad DeKorte	FEMA Region 6
Schuylkill County Mass Care Center, Blue Mountain High School	Jeff Clark	FEMA Region 7
Schuylkill County Reception Center/Mon/Decon Center, Blue Mountain High School	Mike Howe	FEMA HQ

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Three Mile Island Nuclear Generating Station

York County Emergency Operations Center	Nick Buls	FEMA Region 3
York County Emergency Worker Monitoring and Decontamination Station, Dover Borough Fire Department	Mike Howe	FEMA HQ
York County Mass Care Center, Northern High School	Jeff Clark	FEMA Region 7
York County Reception Center/Mon/Decon Center, Northern High School	Mike Howe	FEMA HQ
York County, Fairview Township, Back-up Route Alerting	Nick Buls	FEMA Region 3
York County, Fairview Township, Emergency Operations Center	Nick Buls	FEMA Region 3
York County, Fairview Township, Traffic Access and Control	Nick Buls	FEMA Region 3
York County, Fairview Township, West Shore School District	John Rice	FEMA Region 1
York County, Fairview Township, West Shore School District, Cross Roads Middle School	John Rice	FEMA Region 1
York County, Fairview Township, West Shore School District, Fairview Elementary School	John Rice	FEMA Region 1
York County, Fairview Township, West Shore School District, Hillside Elementary School	John Rice	FEMA Region 1
York County, Goldsboro Borough, Emergency Operations Center	Nick Buls	FEMA Region 3
York County, Lewisberry Borough/Newberry Township/York Haven Borough, Newberry Regional Emergency Operations Center	Nick Buls	FEMA Region 3
York County, Manchester Township, Northeastern School District	John Rice	FEMA Region 1
York County, Manchester Township, Northeastern School District, Conewago Elementary School	John Rice	FEMA Region 1
York County, Manchester Township, Northeastern School District, Mount Wolf Elementary School	John Rice	FEMA Region 1
York County, Springettsbury Township, Central York School District	John Rice	FEMA Region 1
York County, Springettsbury Township, Central York School District, Central York High School	John Rice	FEMA Region 1
York County, Warrington Township, Northern York Emergency Operations Center	Nick Buls	FEMA Region 3

APPENDIX C: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ACP	Access Control Point
ALC	Annual Letter of Certification
ANS	Alert and Notification System
ARC	American Red Cross
ARD	Automatic Ring Down
ARES	Amateur Radio Emergency Services
ATWS	Anticipated Transit Without SCRAM
BRP	Bureau of Radiation Protection
CERT	Community Emergency Response Team
CFR	Code of Federal Regulations
CRCC	Commonwealth Resource Coordination Center
CST	Civil Support Team
DHS	Department of Homeland Security
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMC	Emergency Management Coordinator
EMD	Emergency Management Director
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Extent of Play
EPT	Exercise Planning Team
EPZ	Emergency Planning Zone
ESF	Emergency Support Function
EW	Emergency Workers
FBI	Federal Bureau of Investigation
FD	Fire Department
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FRMAC	Federal Radiological Monitoring Assessment Center
FSE	Full Scale Exercise
FTC	Field Team Coordinator
GE	General Emergency
GIS	Geographic Information Systems
GPS	Global Positioning System

HAB	Hostile Action Based
HazMat	Hazardous Materials
JIC	Joint Information Center
JPIC	Joint Public Information Center
KI	Potassium Iodide
LCD	Liquid Crystal Display
LOA	Letter of Agreement
MOU	Memorandum of Understanding
MSEL	Master Scenario Events List
NPP	Nuclear Power Plant
NRC	Nuclear Regulatory Commission
OOS	Out of Sequence
ORO	Offsite Response Organization
OSD	Optically Stimulated Dosimeter
PAD	Protective Action Decision
PAG	Protective Action Guide
PAR	Protective Action Recommendation
PAZ	Protective Action Zone
PEMA	Pennsylvania Emergency Management Agency
PI	Planning Issue
PIO	Public Information Officer
PPE	Personal Protective Equipment
PRD	Permanent Record Dosimeter
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
REA	Radiation Emergency Area
REP	Radiological Emergency Plan
REPP	Radiological Response Plans and Procedures
RERP	Radiological Emergency Response Plan
RO	Radiological Officer
SAC	Staging Area Coordinator
SAE	Site Area Emergency
SAIC	Science Applications International Corporation
SAV	Staff Assistance Visit
SEOC	State Emergency Operations Center
SEVAN	State Emergency Voice Activation Network
SED	Station Emergency Director
TCP	Traffic Control Point
TEDE	Total Effective Dose Equivalent

TMINGS	Three Mile Island Nuclear Generating Station
UE	Unusual Event (Notification of Unusual Event NUE)
VOAD	Voluntary Organizations Active in Disasters

APPENDIX D: EXTENT OF PLAY AGREEMENT

The 2019 Three Mile Island Nuclear Generating Station Plume Pathway Exercise Extent-of-Play (EOP) Agreement is a document created by the Pennsylvania Emergency Management Agency that sets the parameters for exercise demonstration. The EOP agreement was signed by the FEMA Region III and Pennsylvania Emergency Management Agency planning team members.



pennsylvania
EMERGENCY MANAGEMENT AGENCY



FEMA

THREE MILE ISLAND NUCLEAR GENERATING STATION PLUME EXERCISE

By signing this Extent of Play Agreement, the Commonwealth of Pennsylvania and the FEMA Region III exercise planning team confirms that all conditions have been met to satisfy the requirements to drive exercise play and satisfy the Demonstration Criteria as agreed upon for the May 7, 2019 Three Mile Island Nuclear Generating Station Plume Exercise.

JENNIFER A GREENE Digitally signed by JENNIFER A GREENE
Date: 2019.04.16 10:38:41 -04'00'

FEMA Site Specialist

4/16/

19
Date

Laurin Fleming Digitally signed by Laurin Fleming
DN: cn=Laurin Fleming, o=Pennsylvania Emergency
Management Agency, ou=Technological Hazards
Lead State Planner

Date

JOSEPH A SUDERS Digitally signed by JOSEPH A
SUDERS
Date: 2019.04.30 14:58:31 -04'00'

FEMA Team Leader

Date

THREE MILE ISLAND NUCLEAR GENERATING STATION

EXTENT OF PLAY

2019 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

THIS PAGE IS INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

METHOD OF OPERATION	71
I. Three Mile Island Nuclear Generating Station (TMING)	71
II. Bureau of Radiation Protection (BRP)	71
III. PEMA Operations at the CRCC	71
IV. PEMA Area Office Operations	71
V. Counties Designated to Participate	71
VI. Local Emergency Management.....	72
VII. PEMA Liaison Officers.....	72
VIII. Controllers	72
IX. PEMA Observers.....	73
X. Department of Homeland Security (DHS) Evaluators	73
XI. Demonstration Windows	74
XII. Stand-Down	75
XIII. General Concepts	75
XIV. Re-demonstrations	76
EXTENT OF PLAY AGREEMENT	77
EVALUATION AREA 1	77
EVALUATION AREA 2	82
EVALUATION AREA 3	87
EVALUATION AREA 4	93
EVALUATION AREA 5	97
EVALUATION AREA 6	102
AMERICAN RED CROSS SUPPORT COUNTY CHAPTERS	108
ATTACHMENT A – DEMONSTRATION TABLES	110
I. Plume Phase Exercise	110
II. Post Plume Exercise	114
ATTACHMENT B – LISTING OF PRIOR ISSUES.....	115

METHOD OF OPERATION

- I. Three Mile Island Nuclear Generating Station (TMINGS) 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. TMINGS will notify the Commonwealth Watch and Warning Center, Bureau of Radiation Protection, and risk counties of emergency classifications.
- II. Bureau of Radiation Protection (BRP)
Personnel from the Pennsylvania BRP will be present and participate in the following aspects of the exercise:
 - Plume Exercise – Commonwealth Resource Coordination Center (CRCC), Exelon Emergency Operations Facility (EOF), Technical Support Center (TSC).
 - Field Sampling Teams & R3V Command VehicleBRP personnel will not be evaluated for Field Sampling and R3V demonstrations. Air Sampling Demonstrations will be performed Out of Sequence, preferably before deployment to the Plume Area, for federal observation. In the event the scenario has no radiological release a report of Background Radiation by the Field Monitoring Team would be considered successful demonstration of the criterion.
- III. PEMA Operations at the Commonwealth Resource Coordination Center (CRCC)
This “Method of Operation” Document includes activities for the Full-Scale Plume Exercise (May 7, 2019), and the “Out-of-Sequence” Activities (May 7 and May 8, 2019).

Plume Exercise – May 7, 2019

PEMA Staff and Agency Representatives (AREPs) from designated state departments and agencies will comprise initial operations at the CRCC. The CRCC will be evaluated during this exercise.

“Out-of-Sequence” Activities – May 7, 2019

The PEMA staff will disseminate exercise-related messages to the participating counties for dissemination to the participating school districts during the morning of May 7, 2019. The CRCC and County Emergency Operation Centers (EOC) will participate but will not be evaluated during the “Out-of-Sequence” component. PEMA personnel will serve as “observers” at the identified school districts.

“Out-of-Sequence” Activities – May 8, 2019

PEMA personnel will serve as “Observers” at the various field exercise locations during the “Out-of-Sequence” components of the exercise. An exercise coordinator will remain in the CRCC. The CRCC and counties will not be evaluated during the evening “Out-of-Sequence” component.

- IV. PEMA Area Office Operations
The PEMA Area Offices (Hamburg Eastern Area and Harrisburg Central Area) will not be activated nor evaluated during this exercise. Selected staff of the Area Offices will serve as Liaison Officers to risk and support Counties, Command Post, or Tactical Operations Center. Liaison Officers are exercise participants.
- V. Counties Designated to Participate

Plume Phase Exercise May 7, 2019

The five risk counties (Cumberland, Dauphin, Lancaster, Lebanon, and York), in coordination with PEMA, will demonstrate the capability to mobilize appropriate staff, activate their respective EOCs and implement emergency response operations such as sheltering and/or evacuation. County government will provide direction and coordination to risk municipalities. The three support counties (Adams, Franklin, and Schuylkill) will participate in their assigned support roles. Actual sheltering or evacuation of the general public will be simulated. Note that calls to school districts should be simulated during this exercise.

“Out-of-Sequence” Activities May 7, 2019

The three risk counties (Dauphin, Lancaster, and York), will participate in the school exercise by receiving controller injects from the CRCC and relaying the information to the schools as provided in the county plans. County EOCs will not be evaluated. Note the Cumberland County schools are part of a York County School District and therefore Cumberland County EOC is not required to participate.

“Out-of-Sequence” Activities May 8, 2019

The risk and support counties will demonstrate the designated population support functions as assigned. County EOCs will not be staffed or evaluated.

VI. Local Emergency Management

All affected local municipalities, along with supporting agencies, will participate in the plume exercise. Local municipalities will be federally evaluated as coordinated by PEMA and their associated county. They will demonstrate mobilization of staff, activation of their EOC, and implementation of emergency response operations. Some municipalities may be evaluated on Back-up Route Alerting or Traffic and Access Control Point Operations (TCP/ACP). See Attachment A Section 1.A.2, 1.A.3, and 1.A.4 for those locations being federally evaluated.

VII. PEMA Liaison Officers

Liaison officers will be present at the participating risk/support county EOCs, the TMINGS Emergency Operations Facility (EOF), and the TMINGS Joint Information Center (JIC) to provide assistance, guidance, and support. These liaison officers will participate as players in the plume phase exercise on May 7, 2019.

VIII. Controllers

A lead controller will be present in the CRCC. Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate, including 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 conducting operational tests. Additionally, appropriate test sources will be available and used to verify the operation of the monitoring/survey instruments per manufacturers' recommendations.

- **May 7, 2019 out of Sequence Exercise**
- The offsite lead controller will provide injects to the CRCC who will provide the exercise injects to the schools via the counties.
- **May 7, 2019 Plume Exercise**

The offsite lead controller will be in the CRCC and will coordinate the exercise with the onsite lead controller to facilitate the exercise and determine when objectives have been met for termination.

- **May 8, 2019 Out of Sequence Exercise**

The utility will provide controllers to the decontamination exercise locations. The offsite lead controller will be available at PEMA CRCC. Other locations will be controlled by PEMA Observers and/or county representatives as applicable.

IX. PEMA Observers

PEMA staff, qualified county emergency management personnel, and/or nuclear power plant personnel will be assigned, as required, to key locations for 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 XIV)

X. Department of Homeland Security (DHS) Evaluators

Federal evaluators will be present at the risk and support county EOCs, 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 the risk municipalities in risk counties as identified in Attachment A I.2 in this document. It is agreed that for those agencies and organizations approve of listed participating agencies. If through error or omission by the exempt agency/organization a serious performance issue results which negatively affects the play of the evaluated participant(s), the performance issue will be included in the After-Action Report. In some instances, the exempted agency / organization may accept the issue rather than the evaluated participant if the fault lies with the exempted agency / organization not fulfilling their obligation(s) relative to the level of required participation.

Plume Exercise

Out-of-Sequence Period (Morning of May 7, 2019): Federal evaluators will be present at the identified “out-of-sequence” demonstration sites to evaluate the ability of the public schools to respond to an exercise scenario. (Attachment A, Section I.A.1).

Plume Phase Exercise (Evening of May 7, 2019): Federal evaluators will be present at the CRCC and identified risk and support county EOCs to evaluate player response to the actual and simulated events in the exercise scenario. Additionally, the risk municipalities identified in Attachment A I.2 will be federally evaluated. As required, a “floating-evaluator” will be made available for evaluating any ORO locations not scheduled to have a federal evaluator, but having a prior issue (Attachment A, Section I.A.2 thru I.A.7). A floating evaluator may also stop in at

municipal locations not scheduled for evaluation to confirm that the location is actively participating in the exercise.

Out-of-Sequence Period (Morning of May 8, 2019): Federal evaluators will be present at the Pennsylvania State Police Access Control Point / Traffic Control Point (ACP / TCP) location, as identified in Attachment A, Section I.B.1.

Out-of-Sequence Period (Evening of May 8, 2019): Federal evaluators will be present at participating Reception Centers, Emergency Worker Monitoring and Decontamination Stations, Mass Care Shelters, and Public Monitoring and Decontamination Centers, as identified in Attachment A, Section I.B.2 thru I.B.5.

Other Out-of-Sequence Activities: Federal Evaluators will be present at the Mass Care Walk-Down locations on March 5, 2019 for Adams County Locations, on March 19 for Lancaster County locations, and March 22, 2019 for the Dauphin County locations.

MS-1 Hospitals Federally Evaluated in 2018: Good Samaritan on March 28; Carlisle on May 15; Hanover on July 10; and Gettysburg on October 10.

Post Plume Exercise

No post-plume phase exercise is scheduled during this evaluation.

XI. Demonstration Windows

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:

Plume Phase Exercise

The federally evaluated out-of-sequence MS-1 hospital demonstration were held as follows: Good Samaritan Hospital on March 28, 2018; Hanover Hospital on July 10, 2018; Carlisle Regional Medical Center on May 15, 2018; and Gettysburg Hospital on October 10, 2018. Ephrata Hospital is an MS-1 Hospital for both TMINGS and Peach Bottom Atomic Power Station and will be federally evaluated on October 29, 2019.

The out-of-sequence exercise window for school demonstrations will be from 9:00 a.m. – 11:00 a.m. on May 7, 2019 except for locations with alternate demonstration windows. Locations are specified within Attachment A, Section I.A.1.

The out-of-sequence demonstration of reception centers, mass care centers, monitoring / decontamination centers and emergency worker stations will be conducted from 7:00 p.m. – 9:30 p.m. on May 8, 2019 except for locations with alternate demonstration windows. Locations are specified within Attachment A, Section I.B.2 thru I.B.5.

The out-of-sequence interview of PSP ACPs / TCPs will be from 10:00 a.m. – 12:00 noon on May 8, 2019. Locations are specified within Attachment A, Section I.B.1.

State, County and Municipal EOC operations will be conducted on the evening of May 7, 2019. (Please refer to the Extent of Play Attachment A, Section I.A.2 and I.A.3).

All demonstrations will commence promptly and, barring any complications, not continue beyond the time of the designated demonstration window (Demonstration Tables, Attachment A). Any Municipal TCP demonstrations will occur in conjunction with Municipal EOC operations.

Post Plume Ingestion Exercise

No post-plume phase exercise is scheduled during this evaluation.

XII. Stand-Down

All jurisdictions will request approval on a jurisdiction by jurisdiction basis prior to stand-down. Upon completion of all requirements and confirming with the federal 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.”

Support counties may likewise request approval from the PEMA to terminate the exercise upon completion of all evaluated objectives.

The risk county EOCs will remain operational until the exercise is officially terminated by the State in consultation with the federal evaluator. The Commonwealth Resource Coordination Center will issue an Exercise Termination Message. If county exercise components are demonstrated and completed portions of the EOC may be able to stand-down.

XIII. 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 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 corrected.

XIV. Re-demonstrations

Any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise, provided the federal evaluators approve and 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

INTENT

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

Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner.

(NUREG-0654/FEMA-REP-1, A.1.a, e; A.3, 4; C.1, 4, 6; D.4; E.1, 2; H.3, 4)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, an actual event, out of sequence evaluation, or by means of drills conducted at any time. Responsible OROs must demonstrate the capability to receive notification of an incident from the licensee; verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner, and demonstrate the ability to maintain and staff 24-hour operations. Twenty-four-hour operations can be demonstrated during the exercise via rosters or shift changes or otherwise in an actual activation. Local responders and/or Tribal responders must demonstrate the ability to receive and/or initiate notification to the licensees or other respective emergency management organizations of an incident in a timely manner when they receive information from the licensee or alternate sources. Responsible OROs must demonstrate the activation of facilities for immediate use by mobilized personnel upon their arrival. Activation of facilities and staff, including those associated with the ICS, must be completed in accordance with ORO plans/procedures. The location and contact information for facilities included in the incident command must be available to all appropriate responding agencies and the NPP after these facilities have been activated.

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

The REP program does not evaluate Incident Command System tactical operations, only coordination among the incident command, the utility, and all appropriate OROs pursuant to plans/procedures.

Initial law enforcement, fire service, HAZMAT, and emergency medical response to the TMINGS site may impact the ability to staff REP functions. The ability to identify and request additional resources or identify compensatory measures must be demonstrated. Exercises must also address the role of mutual aid in the incident, as appropriate. Protocols for requesting Federal, state, local, and tribal law enforcement support must be demonstrated, as appropriate. Any resources must be on the ORO's mobilization list, so they can be contacted during an incident, if needed.

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

PEMA Negotiated Extent of Play:

Pre-positioning of state emergency personnel (Liaison Officers) at the Emergency Operations Facility (EOF), Exelon Joint Information Center (JIC), risk and support Counties is appropriate

due to the commuting distance from the individual's duty location or residence. Risk counties / municipalities and support counties will conduct call-outs to demonstrate the mobilization of key personnel. The utility JIC will be evaluated for this drill.

- In all instances, the demonstration of a shift change is not required. A 24-hour staffing list will be demonstrated by providing a roster or staffing chart.
- Actual notifications will be made to the county / municipal EOC personnel for the Plume Phase exercise, May 7, 2019 per plans and procedures.
- All out-of-sequence players will be pre-positioned, and equipment will be demonstrated or shown to be in inventory (School District personnel, PSP TCP / ACP, Reception Centers, Emergency Worker Monitoring and Decontamination Stations, Mass Care / Sheltering Centers, and Public Monitoring and Decontamination Centers).
- Individuals working in state facilities and county EOCs may be pre-positioned for the plume phase exercise.
- Other locations, including Municipal EOCs, will not pre-stage, but will wait for notification of the emergency before staffing their duty location.

Sub-element 1.b – Facilities

INTENT

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

Criterion 1.b.1: Facilities are sufficient to support the emergency response.
(NUREG-0654/FEMA-REP-1, H.3; G.3.a; J.10.h; J.12; K.5.b)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, an actual event, SAVs, or by out of sequence evaluations.

Responsible OROs must demonstrate, no less than every eight years, the availability of facilities to support accomplishment of emergency operations. This includes all alternate and backup facilities. Evaluations are typically performed for EOCs and JICs, as well as other facilities such as reception/relocation centers. Some of the areas evaluated within the facilities are adequate space, furnishings, lighting, restrooms, ventilation, access to backup power, and/or alternate facilities if required to support operations. Radio stations, laboratories, initial warning points and hospitals are not evaluated under 1. b.1.

In addition, facilities will be evaluated for this criterion during the first biennial exercise after any new or substantial changes in structure, equipment, or mission that affect key capabilities, as outlined in respective emergency plans/procedures. A substantial change is one that has a direct effect or impact on emergency response operations performed in those facilities. Examples of substantial changes include modifying the size or configuration of an emergency operations center, adding more functions to a center, or changing the equipment available for use in a center.

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

PEMA Negotiated Extent of Play:

None

Sub-element 1.c - Direction and Control

INTENT

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

Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.

(NUREG-0654/FEMA-REP-1, A.1.d; A.2.a, b; A.3; C.4, 6)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished in a biennial or tabletop exercise.

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

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

PEMA Negotiated Extent of Play:

None

Sub-element 1.d – Communications Equipment

INTENT

This sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs establish and operate reliable primary and backup communication systems to ensure communications with key emergency personnel at locations such as contiguous governments within the EPZ, Federal emergency response organizations, the licensee and its facilities, EOCs, Incident Command Posts, and FMTs.

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/FEMA-REP-1, F.1, 2)

Assessment/Extent of Play

Assessment of this Demonstration Criterion is accomplished initially in a baseline evaluation and subsequently in periodic testing and drills. System familiarity and use must be demonstrated as applicable in biennial and tabletop exercises, or if their use would be required, during an actual event.

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

Communications equipment and procedures for facilities and field units are used as needed for transmission and receipt of exercise messages. All facilities, Field Monitoring Teams, and incident command must have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs must demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt emergency operations. OROs must ensure that a coordinated communication link for fixed and mobile medical support facilities exists. Exercise scenarios may require the failure of a communication system and use of an alternate system, as negotiated in the Extent of Play Agreement.

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

PEMA Negotiated Extent of Play:

The plant will communicate to the risk counties and Commonwealth Watch and Warning Center (CWWC) utilizing the EMNet Communications System (primary) and the commercial telephone system (secondary). Risk and support counties will intercommunicate with the CRCC via the commercial telephone system (primary), SEVAN (secondary), email, and other systems. In the event that the plant is unable to contact the CWWC via the Dedicated Automatic Ring Down Telephone, the Power Plant will contact the CWWC via the commercial telephone system. If the plant cannot contact the CWWC, the Power Plant will contact the Dauphin County EOC and Dauphin County EOC fulfill the role of primary contact until communications with the CWWC can be made.

The Commonwealth coordinates Commonwealth and County response via a phone/internet bridge line.

Risk counties will communicate with their risk municipalities via public safety radio frequencies (EMA Radio), commercial telephone, email, fax, or Amateur Radio Communications (ARES/RACES) or other available means.

Bureau of Radiation Protection Field Teams will demonstrate two or more forms of communications.

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

INTENT

This sub-element derives from NUREG-0654/FEMA-REP-1, which provides that OROs have emergency equipment and supplies adequate to support the emergency response.

Criterion 1.e.1: Equipment, maps, displays, monitoring instruments, dosimetry, potassium iodide (KI) and other supplies are sufficient to support emergency operations.

(NUREG-0654/FEMA-REP-1, H.7, 10; I.7, 8, 9; J.10.a, b, e; J.11, 12; K.3.a; K.5.b)

Assessment/Extent of Play

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

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

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

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

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

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

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

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

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

For Field Monitoring Teams (FMTs), the instruments must be capable of measuring gamma exposure rates and detecting beta radiation. These instruments must be capable of measuring a range of activity and exposure, including radiological protection/exposure control of team

members and detection of activity on air sample collection media, consistent with the intended use of the instrument and the ORO's plans/procedures. An appropriate radioactive check source must be used to verify proper operational response for each low-range radiation measurement instrument (less than 1R/hr) and for high-range instruments when available. If a source is not available for a high-range instrument, a procedure must exist to operationally test the instrument before entering an area where only a high-range instrument can make useful readings.

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

Mutual Aid Resources: If the incoming resources arrive with their own equipment (i.e., monitors and/or dosimetry), they will be evaluated by REP Program standards. FEMA will not inventory equipment that is not part of the REP Program. If an agency has a defined role in the REP Plan, they are subject to the planning process and standards, as well as the guidance of the Manual. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

Radiological Survey Instruments are calibrated per manufactures recommendations. Support counties do not have DRDs, or KI, but those responsible for reception centers and/or monitoring and decontamination centers will have PRDs. Simulated PRDs may be used for the evaluation.

Neither CDV-700 nor CDV-138 instruments are in use in the area.

Evaluation of KI, PRD, or DRD quantities will be verified using inventory sheets. DRDs and KI will not be removed from storage locations and boxes / packages will not be opened, however, lot numbers and expiration dates should be visible for inspection. KI questions will be addressed through interviews.

Annual Direct Reading Dosimeter leakage testing verification and KI extension letters (as appropriate) will be available to the evaluator.

Reception Centers shall be evaluated on their ability to use maps or other documentation to direct evacuating persons to the correct Monitoring/Decontamination Centers and/or Mass Care Centers (as Applicable). Maps will be available for viewing by evaluators. If Reception Centers are collocated with Monitoring/Decontamination centers and Mass Care Centers the use of maps or documents to provide direction does not apply. Personnel manning reception centers should receive a radiological briefing and receive category C dosimetry due to potential for radiological contamination.

EVALUATION AREA 2

Protective Action Decision-Making

Sub-element 2.a - Emergency Worker Exposure Control

INTENT

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

Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits [that take into consideration Total

Effective Dose Equivalent (TEDE) or organ-specific limits] identified in the ORO's plans/procedures.

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

Assessment/Extent of Play

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

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

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

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

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

PEMA Negotiated Extent of Play:

Radiological briefings (which may be supported by video) will be provided to address exposure limits, procedures to replace those personnel approaching exposure limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI to emergency workers will be simulated. The Commonwealth, under direction of the Department of Health, will authorize use of KI when radiological conditions warrant its use. If the scenario has no potential for a radiological release, the decision on the distribution and administration of KI as a protective measure for emergency workers and the authorization process for emergency workers to exceed pre-authorized levels can be addressed through an interview. The completion of one "Dosimetry-KI Report Form" will be demonstrated at locations issuing dosimetry. The decision regarding protective actions and KI is made at the state level and implemented by downstream organizations. Bureau of Radiation Protection (BRP) field monitoring and Radiation Rapid Response Vehicle teams will demonstrate emergency worker exposure control as per their procedures.

Sub-element 2.b. – Radiological Assessment and Protective Action Recommendations (PARs) and Decisions (PADs) for the Plume Phase of the Emergency

INTENT

This sub-element is derived from NUREG-0654 / FEMA-REP-1, which requires that OROs have the capability to independently project integrated dose from projected or actual dose rates and compare these estimates to the Protective Action Guides (PAGs). OROs must have the capability to choose, among a range of protective actions, those most appropriate in a given emergency. OROs base these choices on PAGs from their plans/procedures or EPA's Manual of PAGS and Protective Actions for Nuclear Incidents and other criteria, such as plant conditions, licensee Protective Action Recommendations (PAR)s, coordination of Protective Action Decisions (PADs) with other political jurisdictions (e.g., other affected OROs and incident command), availability of in-place shelter, weather conditions, and situations, to include HAB incidents, the threat posed by the specific hostile action, the affiliated response, and the effect of an evacuation on the threat response effort, that create higher than normal risk from general population evacuation.

Criterion 2.b.1: Appropriate PARs are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of onsite and offsite environmental conditions.

(NUREG-0654 / FEMA-REP-1, I.10 and Supplement 3)

Assessment/Extent of Play

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a biennial or tabletop exercise. During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO must demonstrate the capability to use appropriate means, described in the plans/procedures, to develop PARs for decision-makers based on available information and recommendations provided by the licensee, as well as field monitoring data, if available. The ORO must also consider any release and meteorological data provided by the licensee. The ORO must demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs must be appropriate to the scenario. In all cases, calculation of projected dose must be demonstrated. Projected doses must be related to quantities and units of the PAG to which they will be compared. PARs must be promptly transmitted to decision-makers in a pre-arranged format. When the licensee and ORO projected doses differ by more than a factor of 10, the ORO and licensee must determine the source of the difference by discussing input data and assumptions, using different models, or exploring possible reasons. Resolution of these differences must be incorporated into the PARs if timely and appropriate. The ORO must demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

BRP will validate plant dose projections and coordinate resolution of differences if more than a factor of 10. If the scenario has no radiological release, or potential of a radiological release, the decision-making process used to make PADs can be addressed through an interview. The decision regarding protective actions and KI is made at the state level and implemented by downstream organizations.

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a biennial or tabletop exercise. OROs must have the capability to make both initial and subsequent precautionary and/or protective action decisions. OROs must demonstrate the capability to make initial precautionary and / or protective action decisions in a timely manner appropriate to the incident, based on information from the licensee, assessment of plant status and potential or actual releases, other available information related to the incident, input from appropriate ORO authorities (e.g., incident command), and PARs from the utility and ORO staff. In addition, a subsequent or alternate precautionary and/or protective action decision may be appropriate if various conditions (e.g., an HAB incident, weather, release timing and magnitude) pose undue risk to an evacuation, or if evacuation may disrupt the efforts to respond to a hostile action. OROs must demonstrate the ability to obtain supplemental resources (e.g., mutual aid) necessary to implement a PAD if local law enforcement, fire service, HAZMAT, and emergency medical resources are utilized to augment response to the NPP site or other key infrastructure. Dose assessment personnel may provide additional PARs based on the subsequent dose projections, field monitoring data, or information on plant conditions. In addition, incident command must provide input regarding considerations for subsequent PARs based on the magnitude of the ongoing threat, the response, and/or site conditions. The decision-makers must demonstrate the capability to change protective actions based on the combination of all these factors. If the ORO has determined that KI will be used as a protective measure for the general public under offsite plans / procedures, then it must demonstrate the capability to make decisions on the distribution and administration of KI to supplement sheltering and evacuation. This decision must be based on the ORO's plans/procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision-making process must involve close coordination with appropriate assessment and decision-making staff. If more than one ORO is involved in decision making, all appropriate OROs must communicate and coordinate PADs with each other. In addition, decisions must be coordinated/communicated with incident command. OROs must demonstrate the capability to communicate the results of decisions to all the affected locations. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

The Commonwealth, in developing a PAD, will base the decision upon plant recommendation and condition, confirmation and advice of BRP, environmental data, impediments, and other factors that may impact the decision. If the scenario has no radiological release, or potential of a radiological release, the decision-making process used to make PADs or KI decisions can be addressed through an interview. The decision regarding protective actions (by the Senior State Official) and KI (by the Secretary of the Dept. of Health) is made at the state level and implemented by state agencies and downstream organizations. Decisions are coordinated with the affected counties.

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

INTENT

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

Criterion 2.c.1: Protective action decisions are made, as appropriate, for groups of persons with disabilities and access/functional needs.

(NUREG-0654/FEMA-REP-1, D.4; J.9; J.10.d, e)

Assessment/Extent of Play

Assessment of this Demonstration Criterion must be accomplished concurrently with a licensee exercise and may be demonstrated in a biennial or tabletop exercise that would include the use of plant conditions transmitted from the licensee. Usually it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for incidents where there is a high-risk environmental condition or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, factors that must be considered include weather conditions, shelter availability, availability of transportation assets, risk of evacuation versus risk from the avoided dose, and precautionary school evacuations. In addition, decisions must be coordinated / communicated with the incident command. In situations where an institutionalized population cannot be evacuated, the ORO must consider use of KI. Applicable OROs must demonstrate the capability to alert and notify all public-school systems/districts of emergency conditions that are expected to or may necessitate protective actions for students. Demonstration requires that the OROs contact public school systems/districts during the exercise. The OROs must demonstrate how the decision-making process takes those with disabilities and access/functional needs (e.g., nursing homes, correction facilities, licensed day cares, mobility-impaired individuals, and transportation-dependent individuals) into account. In accordance with plans/procedures, OROs and/or officials of public-school systems / districts must demonstrate the capability to make prompt decisions on protective actions for students. The decision-making process, including any preplanned strategies for protective actions for that Emergency Classification Levels (ECLs), must consider the location of students at the time (e.g., whether the students are still at home, en route to school, or at school). Since other agencies place requirements on hospitals to prepare for contaminated patients, the REP Program has no need to evaluate host hospitals, nor does the ORO have the responsibility to provide training or dosimetry. Additionally, hospital evacuation plans do not need to be reviewed or tested by the REP program. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

PEMA will provide decision making regarding special populations. Risk counties and/or state agencies will provide by interview or simulation the notification to the special populations regarding the decision. If the scenario has no radiological release, or potential of a radiological release, the decision-making process used to make PARs can be addressed through an interview.

The decision regarding protective actions and KI is made at the state level and implemented by downstream organizations.

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

This sub-element will not be evaluated during this exercise.

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

INTENT

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

Criterion 3.a.1: The OROs issue appropriate dosimetry, KI, and procedures, and manage radiological exposure to emergency workers in accordance with the plans/procedures. Emergency workers periodically and at the end of each mission read their dosimeters and record the readings on the appropriate exposure record or chart. OROs maintain appropriate record-keeping of the administration of KI to emergency workers. (NUREG-0654/FEMA-REP-1, J.10.e; K.3.a, b; K.4)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency. OROs must demonstrate the capability to provide emergency workers (including supplemental resources) with the appropriate direct-reading and permanent record dosimetry, dosimeter chargers, KI, and instructions on the use of these items. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows an individual(s) to read the administrative reporting limits that are pre-established at a level low enough to consider subsequent calculation of TEDE and maximum exposure limits, for those emergency workers involved in lifesaving activities, contained in the ORO’s plans / procedures. Each emergency worker must have basic knowledge of radiation exposure limits as specified in the ORO’s plans/procedures. If supplemental resources are used, they must be provided with just-in-time training to ensure basic knowledge of radiation exposure control. Emergency workers must demonstrate procedures to monitor and record dosimeter readings and manage radiological exposure control. During a plume phase exercise, emergency workers must demonstrate the procedures to be followed when administrative exposure limits and turn-back values are reached.

The emergency worker must report accumulated exposures during the exercise as indicated in the plans/procedures. OROs must demonstrate the actions described in the plans/procedures by determining whether to replace the worker, authorize the worker to incur additional exposures, or take other actions. If exercise play does not require emergency workers to seek authorizations for additional exposure, evaluators must interview at least two workers to determine their knowledge of whom to contact in case authorization is needed, and at what exposure levels. Workers may use any available resources (e.g., written procedures and/or coworkers) in providing responses. Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission. In such cases, adequate control of exposure can be achieved for all team members using one direct-reading dosimeter worn by the team leader. Emergency workers assigned to low-exposure rate fixed facilities (e.g., EOCs and communications center within the EPZ, reception centers, and counting laboratories) may have individual direct-reading dosimeters or they may be monitored using group dosimetry (i.e., direct-reading dosimeters strategically placed in the work area). Each team member must still have his or her own permanent record dosimetry. Individuals authorized by the ORO to reenter an evacuated area during the plume (emergency) phase, must be limited to the lowest radiological exposure commensurate with completing their missions. OROs may have administrative limits lower than EPA-400-R-92-001 dose limits for emergency workers performing various services (e.g., life saving, protection of valuable property, all activities). OROs must ensure that the process used to seek authorization for exceeding dose limits does not negatively impact the capability to respond to an incident where life saving and/or protection of valuable property may require an urgent response. OROs must demonstrate the capability to accomplish distribution of KI to emergency workers consistent with decisions made. OROs must have the capability to develop and maintain lists of emergency workers who have ingested KI, including documentation of the date(s) and time(s) they did so. Ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI shall not be performed. OROs must demonstrate the capability to formulate and disseminate instructions on using KI for those advised to take it. Emergency workers must demonstrate basic knowledge of procedures for using KI whether the scenario drives the implementation of KI use. This can be accomplished by an interview with the evaluator.

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

PEMA Negotiated Extent of Play:

Radiological briefings will be provided to address exposure limits, procedures to replace personnel 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. OROs should also demonstrate the use of all applicable dosimetry forms. The completion of one "Dosimetry-KI Report Form" will be demonstrated. At any time, players may ask other players or supervisors to clarify radiological information. In Pennsylvania, emergency workers do not have turn back values. 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. Personnel who may come into contact with contaminated persons, equipment, and vehicles should be issued PRDs. Simulated PRDs with mock serial numbers may be used to simulate issue. Emergency workers who are assigned to low exposure rate areas, e.g., at counting laboratories, emergency operations centers,

and communications centers, may have individual permanent record dosimeters or they may be monitored by area dosimeters strategically placed in the work area. In Pennsylvania this will be accomplished using 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 (Area Kit includes 2 DRDs)
- 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. To demonstrate an understanding of the use of the dosimetry equipment, KI and associated forms; the location need only remove and distribute/issue a maximum of six (6) units of dosimetry from their inventory. Simulation PRDs with mock serial numbers and simulated KI may be issued. The location will demonstrate filling out a minimum of one (1) Dosimetry/KI Report Form.

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

INTENT

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

Criterion 3.b.1: KI and appropriate instructions are available if a decision to recommend use of KI is made. Appropriate record-keeping of the administration of KI for institutionalized individuals and the general public is maintained.

(NUREG-0654 / FEMA-REP-1, J.10.e, f)

Assessment / Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency. OROs must demonstrate the capability to make KI available to institutionalized individuals, and, where provided for in their plans/procedures, to members of the general public. OROs must demonstrate the capability to accomplish distribution of KI consistent with decisions made. OROs must have the capability to develop and maintain lists of institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. Ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI shall not be performed. OROs must demonstrate the capability to formulate and disseminate instructions on using KI for those advised to take it. If a recommendation is made for the general public to take

KI, appropriate information must be provided to the public by the means of notification specified in the ORO's plans/procedures.

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

PEMA Negotiated Extent of Play:

Within Pennsylvania, the Pennsylvania Department of Health is responsible for distribution of KI to the general public located within the EPZ. Pre-distribution is accomplished on an annual basis. Pennsylvania does not distribute KI at reception centers. Evaluation of emergency worker KI quantities will be verified using inventory sheets. Ki will not be removed from storage location and boxes will not be opened. Ki questions will be addressed through interview. Counties which do not have institutionalized individuals are not evaluated for this criterion. If the scenario has no radiological release, or potential of a radiological release, the decision-making process on the need to recommend KI can be addressed through an interview if required.

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

INTENT

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

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, an actual event, or by means of drills conducted at any time. Applicable OROs must demonstrate the capability to alert and notify (i.e., provide PARs and emergency information and instructions to) persons with disabilities and access/functional needs, including hospitals/medical facilities, nursing homes, correctional facilities, and mobility-impaired and transportation-dependent individuals. OROs must demonstrate the capability to provide for persons with disabilities and access/functional needs in accordance with plans/procedures. Contact with persons with disabilities and access/functional needs and reception facilities may be actual or simulated, as agreed to in the Extent of Play. Some contacts with transportation providers must be contacted, as negotiated in the Extent of Play. All actual and simulated contacts must be logged. Since other agencies place requirements on hospitals to prepare for contaminated patients, the REP Program has no need to evaluate host hospitals, nor does the ORO have the responsibility to provide training or dosimetry. Additionally, hospital evacuation plans do not need to be reviewed or tested by the REP program. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

Lists of persons with disabilities and access/functional needs including name, address, contact information, and description of need shall be maintained 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. Evaluators may ask, by interview, about the transportation plans concerning transportation, staging, source of vehicles, radiological protection of the drivers/emergency workers, and routes or assignments of vehicles for transportation dependent individuals and transportation of persons with disabilities and access/functional needs. No buses or drivers will be mobilized. Initial contact, by the county, with special populations (hospitals, nursing homes and county correctional facilities) may be actual. All subsequent calls will be simulated. Actual contacts (up to two per Risk County) will be made with transportation providers per the county. All actual and simulated contacts should be logged.

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial or tabletop exercise, an actual event, or by means of drills conducted at any time. School systems/districts (these include public and private schools, kindergartens, preschools, and licensed day care) must demonstrate the ability to implement PADs for students. The demonstration must be made as follows: each school system/district within the 10-mile EPZ must demonstrate implementation of protective actions. At least one school per affected system/district must participate in the demonstration. Canceling the school day, dismissing early, or sheltering in place must be simulated by describing to evaluators the procedures that would be followed. 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, appropriate school personnel including decision-making officials (e.g., schools' superintendent/principals and transportation director/bus dispatchers), and at least one bus driver (and the bus driver's escort, if applicable) must be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plans/procedures, must be verified. Officials of the school system(s) must demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools. If a school facility has emergency plans as a condition of licensing, those plans may be submitted to FEMA review in place of demonstration or interview pursuant to the ORO's plans/procedures as negotiated in the Extent of Play Agreement. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

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, evaluated schools, and the applicable county. Evacuation of students will be conducted through an interview process with School District personnel or the building principal. School administration will receive notifications of the incident from the county and will make appropriate decisions for and coordinate the responses of their schools. The role of the bus driver may be

conducted through an interview conducted 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 will contact in the event of an emergency in accordance with plans and procedures. Any simulated contacts will be logged.

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

INTENT

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

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, an actual event, staff assistance visit, or by means of drills conducted at any time. OROs must demonstrate the capability to select, establish, and staff appropriate traffic and access control points consistent with current conditions and PADs (e.g., evacuating, sheltering, and relocation) in a timely manner. OROs must demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled. Traffic and access control staff must demonstrate accurate knowledge of their roles and responsibilities, including verifying emergency worker identification and access authorization to the affected areas, as per the Extent of Play Agreement. These capabilities may be demonstrated by actual deployment or by interview, in accordance with the Extent of Play Agreement. In instances where OROs lack authority necessary to control access by certain types of traffic (e.g., rail, water, and air traffic), they must demonstrate the capability to contact the state or Federal agencies that have the needed authority, as agreed upon in the Extent of Play Agreement. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

State and Municipal Traffic and Access control will be demonstrated by interview at the applicable Barracks or EOC of jurisdiction and include instruction to staff appropriate for plans and conditions (PAD). The traffic/access control personnel will not be deployed to the traffic/access control point(s). If the designated assignment is a location within the EPZ, a radiological briefing will be provided to the assigned individuals. Reception Centers shall provide a traffic control plan for the location being evaluated.

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, an actual event, staff assistance visit, or by means of drills conducted at any time. OROs must demonstrate the capability to identify and take appropriate actions concerning impediments to evacuation. In demonstrating this capability, the impediment must remain in place during the evacuation such that re-routing of traffic is required and must result in the decision-making and coordination with the JIC to communicate the alternate route to evacuees leaving the area. When, due to the specifics of the scenario or jurisdiction, the impediment cannot be located on an evacuation route, it must be located to impact the evacuation. Where not possible, actual dispatch of resources need not be physically demonstrated; however, all contacts, actual or simulated, must be logged. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

County EOCs will demonstrate the ability to identify and take appropriate actions concerning impediments to evacuation by inject or interview. One impediment inject per risk county will be provided. Actual dispatch of resources to deal with impediments, such as tow trucks, need not be demonstrated; however, simulated contacts will be logged. If the scenario does not lead to evacuation the criteria shall be deemed complete if the ORO can describe to the evaluator, through controller inject or interview, the actions they would take to overcome a major traffic impediment during an evacuation and how such actions would be communicated to the public and affected OROs. (Risk counties only)

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

This sub-element will not be evaluated during this exercise.

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

This sub-element will not be evaluated during this exercise.

EVALUATION AREA 4

Field Measurement and Analyses

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

INTENT

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

important to collect field radiological data to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

Criterion 4.a.1: [RESERVED]

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise. Other means may include drills that would fully demonstrate technical proficiency. Responsible OROs must demonstrate the capability to brief FMTs on predicted plume location and direction, plume travel speed, and exposure control procedures before deployment. During an HAB incident, the Field Team management must keep the incident command informed of field monitoring teams' activities and location. Coordination with FMTs and field monitoring may be demonstrated as out-of-sequence demonstrations, as negotiated in the Extent of Play Agreement. Field measurements are needed to help characterize the release and support the adequacy of implemented protective actions, or to be a factor in modifying protective actions. Teams must be directed to take measurements at such locations and times as necessary to provide sufficient information to characterize the plume and its impacts. If the responsibility for obtaining peak measurements in the plume has been accepted by licensee field monitoring teams, with concurrence from OROs, there is no requirement for these measurements to be repeated by ORO monitoring teams. If the licensee FMTs 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 FMTs (licensee, Federal, and ORO) is essential. OROs will use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts or the licensee), as necessary. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.

PEMA Negotiated Extent of Play:

Field Team control will be performed 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 deployed 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 teams' dose ALARA. A FEMA Evaluator(s) will meet the R3V and field teams at the South-Central Regional Office (located at 909 Elmerton Ave, Harrisburg PA 17110) for initial equipment checks at 1:30 PM on May 7, 2019. In the event the scenario has no radiological release a report of background radiation by the FMT will signify successful demonstration of the criterion. The Field Teams and R3V will not be evaluated during this exercise. To facilitate those times where the plume comes out late in the exercise, BRP field teams will demonstrate air sampling prior to leaving the meeting location. The field team will verbalize

their air sampling actions while in the field and utilize controller data to simulate the counting of the sample and relay the information to the R3V.

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise. Other means may include drills that would fully demonstrate technical proficiency. Two or more FMTs must demonstrate the capability to make and report measurements of ambient radiation to the field team coordinator, dose assessment team, or other appropriate authority. FMTs must also demonstrate the capability to obtain an air sample for measurement of airborne radioiodine and particulates, and to provide the appropriate authority with field data pertaining to measurement. If samples have radioactivity significantly above background, the authority must consider the need for expedited laboratory analyses of these samples. Coordination concerning transfer of samples, including a chain-of-custody form(s), to a radiological laboratory(ies) must be demonstrated. OROs must share data in a timely manner with all other appropriate OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form(s) for transfer to a laboratory(ies), will be in accordance with the ORO's plans / procedures. OROs must use Federal resources as identified in the NRF Nuclear / Radiological Incident Annex and other resources (e.g., compacts or the licensee). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

Measurements will be made by the Department of Environmental Protection (DEP), Bureau of Radiation Protection (BRP), in accordance with the BRP Standard Implementing Procedures (IPs). Two mobile monitoring teams from BRP will demonstrate ambient radiation monitoring and radioiodine and particulate sampling. Field teams will be equipped with appropriate dosimetry and KI. Both teams will be observed by FEMA. Each team will be directed to monitoring location and perform actual radiation measurements at each location. Measurements may consist of truck installed radiation monitor or hand-held radiation instruments. An actual air sample will be taken at the R3V staging area prior to field team departure. Field teams will discuss air sample counting procedures via an interview process. Teams will then take additional simulated air samples, as directed, at additional locations, if conditions are appropriate for radioiodine sampling and relay information to the R3V. In place of silver zeolite cartridges, charcoal cartridges will be used for the exercise. All measurements will be forwarded to the R3V immediately upon obtaining data. Evaluators will meet the field teams at the South-Central Regional Office (located at 909 Elmerton Ave, Harrisburg PA 17110) on May 7, 2019 at 1:30 PM. The Field Teams and R3V will **NOT** be evaluated during this exercise.

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

INTENT

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

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency. The ORO's FMTs must demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support reentry, relocation, and return decisions. When resources are available, use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and chain-of-custody form(s) for transfer to a laboratory(ies), will be in accordance with the ORO's plans/procedures. The FMTs and/or other sampling personnel must secure ingestion pathway samples from agricultural products and water. Samples in support of relocation and return must be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition. OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts, the licensee, or nuclear insurers). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

This sub-element will not be demonstrated or evaluated during this exercise. This element was demonstrated during the Post Plume Exercise conducted during the week of March 7, 2011 for the Commonwealth.

Sub-element 4.c - Laboratory Operations

INTENT

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

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial or tabletop exercise. Other means may include drills, seminars or training activities that would fully demonstrate technical proficiency. The laboratory staff must demonstrate the capability to follow appropriate procedures for receiving samples, including logging information, preventing contamination of the laboratory(ies), preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff must demonstrate the capability to prepare samples for conducting measurements. The laboratory(ies) must be appropriately equipped to provide, upon request, timely analyses of media of sufficient quality and sensitivity to support assessments and decisions anticipated in the ORO's plans/procedures. The laboratory instrument calibrations must be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident must be as described in the plans/procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g., transuranics or as a result of a terrorist incident) or if warranted by incident circumstances. Analysis may require resources beyond those of the ORO. The laboratory staff must be qualified in radio-analytical techniques and contamination control procedures. OROs must use Federal resources as identified in the NRF Nuclear/Radiological Incident Annex and other resources (e.g., compacts, the licensee, or nuclear insurers). Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

This sub-element will not be demonstrated or evaluated during this exercise. This element was demonstrated during the Post Plume Exercise conducted during the week of March 7, 2011 for the Commonwealth.

EVALUATION AREA 5

Emergency Notification and Public Information

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

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to provide prompt instructions to the public within the plume exposure pathway EPZ. Specific provisions addressed in this Sub-element are further discussed in Section V, Part A of this Manual, Alert and Notification Systems.

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current REP guidance. (NUREG-0654/FEMA-REP-1, E.5, 6, 7)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, drills, or operational testing of equipment that would fully demonstrate capability. Responsible OROs must demonstrate the capability to sequentially provide an alert signal followed by an initial

instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume EPZ. Following the decision to activate the alert and notification system, OROs must complete system activation for primary alert/notification and disseminate the information/instructions in a timely manner. For exercise purposes, timely is defined as with a sense of urgency and without undue delay. If message dissemination is identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely. Procedures to broadcast the message must be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test message(s) is not required. The procedures must be demonstrated up to the point of actual activation. The alert signal activation should be simulated, not performed. Evaluations of EAS broadcast stations may also be accomplished through SAVs. The capability of the primary notification system to broadcast an instructional message on a 24-hour basis must be verified during an interview with appropriate personnel from the primary notification system, including verification of provisions for backup power or an alternate station.

The initial message must include at a minimum the following elements:

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

If route alerting is demonstrated as a primary method of alert and notification, it must be done in accordance with the ORO's plans/procedures and the Extent of Play Agreement. OROs must demonstrate the capability to accomplish the primary route alerting in a timely manner (not subject to specific time requirements). At least one route needs to be demonstrated and evaluated. The selected route(s) must vary from exercise to exercise. However, the most difficult route(s) must be demonstrated no less than once every 8 years. All alert and notification activities along the route(s) must be simulated (that is, the message that would be used is read for the evaluator, but not actually broadcast) as negotiated in the Extent of Play. Actual testing of the mobile public address system will be conducted at an agreed-upon location. OROs may demonstrate any means of primary alert and notification included in their plans / procedures as negotiated in the Extent of Play Agreement. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

The Commonwealth of Pennsylvania has implemented a Statewide EAS Control System in cooperation with the Pennsylvania Association of Broadcasters per the State Emergency Communications Committee and Pennsylvania Emergency Alert System State EAS Plan (September 23, 2010 and revised on November 2, 2011). The State CRCC (PEMA) is the initiating point for the activation of the EAS. Risk counties have the control equipment for activation of sirens. Coordination will occur between the State CRCC and the affected counties with respect to the Alert and Notification System (ANS) Process as to when the sirens and EAS messages will occur. Sirens will be coordinated, and the sounding simulated at the appropriate time with the simulated activation of EAS taking place approximately three minutes following the simulated activation of the sirens. Regular broadcasting will not be interrupted on the EAS stations. All

subsequent actions to broadcast stations will be simulated. Broadcast of the message(s) or test message(s) is not required and not requested. Counties may elect to provide Subsequent News Bulletins or County Specific EAS messages to their EAS stations. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, ANS activation should be accomplished in a timely manner for primary alerting / notification. This action will not be subject to specific time requirements but should be done with a sense of urgency and without undo delay. All actions to broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by explanation during an interview. Each evaluated municipality per Risk County will demonstrate, by interview, route alerting of the hearing-impaired residents within their jurisdiction. Hearing impaired notification teams will not be deployed.

Criterion 5.a.2: [RESERVED]

Criterion 5.a.3: Backup alert and notification of the public is completed within a reasonable time following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654/FEMA-REP-1, E.6, Appendix 3.B.2.c)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, drills, or operational testing of equipment that would fully demonstrate capability. If the exercise scenario calls for failure of any portion of the primary system(s) or if any portion of the primary system(s) fails to function during the exercise, OROs must demonstrate backup means of alert and notification. Backup means of alert and notification will differ from facility to facility. Backup alert and notification procedures that would be implemented in multiple stages must be structured such that the population closest to the plant (e.g., within two miles) is alerted and notified first. The populations farther away and downwind of any potential radiological release would be covered sequentially (e.g., two to five miles, followed by downwind five to ten miles, and finally the remaining population as directed by authorities). Topography, population density, existing ORO resources, and timing will be considered in judging the acceptability of backup means of alert and notification. Although circumstances may not allow this for all situations, FEMA and the NRC recommend that OROs and operators attempt to establish backup means that will reach those in the plume exposure EPZ within a reasonable time of failure of the primary alert and notification system, with a recommended goal of 45 minutes. The backup alert message must, at a minimum, include (1) a statement that an emergency exists at the plant and (2) instructions regarding where to obtain additional information. When backup route alerting is demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route(s) must be simulated (that is, the message that would be used is read for the evaluator, but not actually broadcast) as negotiated in the Extent of Play. Actual testing of the mobile public-address system will be conducted at an agreed-upon location. OROs may demonstrate any means of backup alert and notification included in their plans / procedures as negotiated in the Extent of Play Agreement. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

Plans specify that route alerting is used as a back up to the sirens. County liaisons will provide a controller inject to the risk counties that a siren has failed. The county will demonstrate contacting one municipal EOC regarding the failed siren in that municipality. The municipal EOC will then dispatch one route alert team to cover one route alert sector affected by the failed siren. All other routes will be simulated. Route alert teams should finish their route in a reasonable time with a

target time of about 45 minutes from time of siren failure. OROs may utilize IPAWs or other public alerting systems in accordance with their plans but use of such systems will not negate the need to provide for demonstration of route alerting by the ORO.

Criterion 5.a.4: Activities associated with FEMA-approved exception areas (where applicable) are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation.
(NUREG-0654/FEMA-REP-1, E.6; Appendix 3.B.2.c)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, drills, or operational testing of equipment that would fully demonstrate capability. OROs with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report), five to ten miles from the NPP, must demonstrate the capability to accomplish primary alerting and notification of the exception area(s). FEMA and the NRC recommend that OROs and operators establish means that will reach those in approved exception areas in a timely manner, with a recommended goal of 45 minutes, once the initial decision is made by authorized offsite emergency officials to notify the public of an incident. The exception area alert message must, at a minimum, include (1) a statement that an emergency exists at the plant and (2) instructions regarding where to obtain additional information. For exception area alerting, at least one route must be demonstrated and evaluated. The selected route(s) must vary from exercise to exercise. However, the most difficult route(s) must be demonstrated no less than once every eight years. All alert and notification activities along the route(s) must be simulated (that is, the message that would be used is read for the evaluator, but not actually broadcasted) as negotiated in the Extent of Play. Actual testing of the mobile public-address system will be conducted at an agreed-upon location. For exception areas alerted by aircraft, actual flights will be negotiated in the Extent of Play but must be demonstrated no less than once every eight years. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

This sub-element will not be demonstrated or evaluated during this exercise. Pennsylvania has no exception areas.

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

INTENT

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

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

Assessment/Extent of Play

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

Message elements: The ORO must ensure that emergency information and instructions are consistent with PADs made by appropriate officials. The emergency information must contain all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, shelter-in-place instructions, information concerning protective actions for schools and persons with disabilities and access/functional needs, and public inquiry hotline telephone number) to assist the public in carrying out the PADs provided. The ORO must also be prepared to disclose and explain the ECL of the incident. At a minimum, this information must be included in media briefings and/or media releases. OROs must demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion exposure pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas. The emergency information must be all-inclusive by including the four items specified under exercise Demonstration Criterion 5.a.1 and previously identified protective action areas that are still valid, as well as new areas. The OROs must demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs must demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plans / procedures. OROs must demonstrate the capability to develop emergency information in a non-English language when required by the plans / procedures. If ingestion pathway measures are exercised, OROs must demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plans/procedures.

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

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

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

enforcement response must be coordinated/communicated with appropriate security authorities (e.g., law enforcement and NPP security agencies) in accordance with ORO plans/procedures. All activities must be based on the ORO's plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent-of-Play Agreement.

PEMA Negotiated Extent of Play:

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 and support 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 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. The Commonwealth utilizes a virtual JIC in which the Commonwealth and the Utility/Independent Power Producer will run coordinated public information between the Commonwealth CRCC and from the Utility/IPP EOF. The coordination will be demonstrated by simulation through a "Virtual News Conference or by interview if a coordinated conference cannot be achieved."

EVALUATION AREA 6

Support Operations/Facilities

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

INTENT

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

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

Assessment/Extent of Play

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

Before using monitoring instrument(s), the monitor(s) must demonstrate the process of checking the instrument(s) for proper operation. Staff responsible for the radiological monitoring of evacuees must demonstrate the capability to attain and sustain, within about 12 hours, a monitoring productivity rate per hour needed to monitor the 20 percent EPZ population planning base. The monitoring productivity rate per hour is the number of evacuees that can be monitored, per hour, by the total complement of monitors using an appropriate procedure. For demonstration of

monitoring, decontamination, and registration capabilities, a minimum of six evacuees must be monitored per station using equipment and procedures specified in the plans / procedures. The monitoring sequences for the first six simulated evacuees per monitoring team will be timed by the evaluators to determine whether the 12-hour requirement can be met. OROs must demonstrate the capability to register evacuees upon completion of the monitoring and decontamination activities. The activities for recording radiological monitoring and, if necessary, decontamination must include establishing a registration record consisting of the evacuee's name, address, results of monitoring, and time of decontamination (if any), or as otherwise designated in the plan and/or procedures. Audio recorders, camcorders, or written records are all acceptable means for registration. Monitoring activities shall not be simulated. Monitoring personnel must explain use of trigger/action levels for determining the need for decontamination. They must also explain the procedures for referring any evacuees who cannot be adequately decontaminated for assessment and follow-up in accordance with the ORO's plans/procedures. All activities must be based on the plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement. Decontamination of evacuees may be simulated and conducted by interview. Provisions for separate showering and same-sex monitoring must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas. Provisions must also exist to separate contaminated and uncontaminated evacuees, provide changes of clothing for those with contaminated clothing; and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any evacuee found to be contaminated, procedures must be discussed concerning handling of potential contamination of vehicles and personal belongings. Waste water from decontamination operations does not need to be collected. Individuals who have completed monitoring (and decontamination, if needed) must have means (e.g., hand stamp, sticker, bracelet, form, etc.) indicating that they, and their service animals and vehicles, where applicable, have been monitored, cleared, and found to have no contamination or contamination below the trigger/action level or have been placed in a secure area until they can be monitored and decontaminated, if necessary. In accordance with plans/procedures, individuals found to be clean after monitoring do not need to have their vehicle monitored. These individuals do not require confirmation that their vehicle is free from contamination prior to entering the congregate care areas. However, those individuals who are found to be contaminated and are then decontaminated will have their vehicles secure area or monitored and decontaminated (if applicable) and do require confirmation that their vehicle is being held in a secure area or free from contamination prior to entering the congregate care areas.

PEMA Negotiated Extent of Play:

Radiological monitoring demonstration sites should possess a roster of the monitoring personnel, as well as providing a means by which the mass care reception center or others could verify that the person has been monitored and has been deemed uncontaminated. The radiological monitoring station(s) should be prepared to monitor 20 percent of the risk population within a 12-hour period as allocated to that location. In some location's reception centers, monitoring and decontaminations centers, and/or mass care centers may be collocated.

One mass care center and one public monitoring / decontamination center will be demonstrated per Support County during the out-of-sequence window. The support counties will provide space at designated mass care centers or reception centers for operation of monitoring/decontamination centers. Schematics of these monitoring / decontamination centers will be available to show the

organization within the facility and space management for monitoring and decontamination. Procedures will be demonstrated to evidence the separation of contaminated and non-contaminated (clean) individuals.

At each reception center, 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 unless collocated with mass care and monitoring/decontamination. As negotiated with FEMA, this criterion will be demonstrated but not be evaluated because registration is not done at the reception center. Reception workers encountering potentially contaminated persons, objects, or vehicles are Class C workers and should be issued a PRD (may be simulated). Reception centers co-located with Public Monitoring and Decontamination Centers and Mass Care Centers do not require strip maps or written directions.

At the evacuee monitoring/decontamination center, a minimum of six volunteer evacuees will be monitored (or one volunteer evacuee may be monitored six times). Suitable radiological monitoring instruments will be issued to and demonstrated by the initial monitoring team(s). 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. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used. One of the simulated evacuees, based upon controller injects, will not be able to be decontaminated. Discussions concerning the processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. 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. Monitoring/decontamination centers are not issued DRDs or KI since the centers and stations are outside the EPZ. Category "C" Dosimetry applies. Permanent Record Dosimeters (PRDs) may be simulated.

Radiation readings/contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pads. Long runs of plastic or paper will not be demonstrated, but the materials shall be available and explained. Positioning of a fire apparatus on-site may be simulated if otherwise required.

Participants should be able to describe and/or show a vehicle traffic plan showing movement of clean and contaminated vehicles, holding areas, and vehicle decontamination areas as appropriate. Traffic control signs, cones, etc. shall be demonstrated.

Water from decontamination activities may go directly to a storm drain or other sewer or drain system or area normally designated for wastewater that has been used for bathing or washing of vehicles and or equipment.

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

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

INTENT

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

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

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, drills, or SAV. The monitoring staff must demonstrate the capability to monitor emergency worker personnel and their equipment and vehicles for contamination in accordance with the ORO's plans/procedures. Specific attention must be given to equipment, including any vehicles that were in contact with contamination. The monitoring staff must demonstrate the capability to make decisions on the need for decontamination of personnel, equipment, and vehicles based on trigger/action levels and procedures stated in the ORO plans/procedures. Monitoring of emergency workers does not have to meet the 12-hour requirement. However, appropriate monitoring procedures must be demonstrated for a minimum of two emergency workers and their equipment and vehicles. Before using monitoring instrument(s), the monitor(s) must demonstrate the process of checking the instrument(s) for proper operation. The area to be used for monitoring and decontamination must be set up as it would be in an actual emergency, with all route markings, instrumentation, record keeping, and contamination control measures in place. Monitoring procedures must be demonstrated for a minimum of one vehicle. It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as radiator grills, bumpers, wheel wells, tires, and door handles must be demonstrated. Interior surfaces of vehicles that were in contact with contaminated individuals must also be checked. Decontamination of emergency workers may be simulated and conducted via interview. Provisions for separate showering and same-sex monitoring must be demonstrated or explained. The staff must demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs, and appropriate means (e.g., partitions, roped-off areas) to separate uncontaminated from potentially contaminated areas. Provisions must also exist to separate contaminated and uncontaminated individuals where applicable; provide changes of clothing for those with contaminated clothing; and store contaminated clothing and personal belongings to prevent further contamination of emergency workers or facilities. OROs must demonstrate the capability to register emergency workers upon completion of the monitoring and decontamination activities. The activities for recording radiological monitoring and, if necessary, decontamination must include establishing a registration record consisting of the emergency worker's name, address, results of monitoring, and time of decontamination (if any), or as otherwise designated in the plan and/or procedures. Audio recorders, camcorders, or written recorders are all acceptable means for registration. Monitoring activities shall not be simulated. Monitoring personnel must explain use of trigger / action levels for determining the need for decontamination. They must also explain the procedures for referring any emergency workers who cannot be adequately decontaminated for assessment and follow-up in accordance with the ORO's plans / procedures.

Decontamination capabilities and provisions for vehicles and equipment that cannot be successfully decontaminated may be simulated and conducted by interview. Waste water from decontamination operations does not need to be collected. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

At the emergency worker monitoring/decontamination stations schematics of these monitoring/decontamination stations will be available to show organization and space management. One emergency worker will be monitored, including thyroid screening. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males (Some locations use a single shower with procedures to maintain separation of the sexes). Showering will be simulated, water will not be used. Suitable radiological monitoring instruments will be issued to the initial monitoring team. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used.

Emergency worker station personnel will consist of a minimum of one monitor with a survey instrument and one recorder and enough personnel to demonstrate monitoring of at least one vehicle. The evaluator will request that vehicle decontamination procedures be explained after the vehicle (with simulated contamination) has been monitored. 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. Decontamination capabilities and provisions for vehicles and/or equipment that cannot be decontaminated will be simulated and conducted by interview. Water may be used but not required for evaluation.

Radiation readings/contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pads. Long runs of plastic covered with paper will not be demonstrated, but the materials shall be available and explained. Positioning of a fire apparatus on-site may be simulated if otherwise required.

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

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. PRDs may be simulated.

Water from decontamination activities may go directly to a storm drain or other sewer or drain system or area normally designated for wastewater that has been used for bathing or washing of vehicles and or equipment.

Sub-element 6.c - Temporary Care of Evacuees

INTENT

This Sub-element is derived from NUREG-0654/FEMA-REP-1, which requires OROs to have the capability to establish relocation centers in host/support jurisdictions. The American Red Cross normally provides congregate care in support of OROs under existing letters of agreement.

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. 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/FEMA-REP-1, J.10.h, J.12)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, drills, or SAV. The evaluator must conduct a walk-through of the center to determine, through observation and inquiries, that the services and accommodations are consistent with applicable guidance. For planning purposes, OROs must plan for a sufficient number of congregate care centers in host/support jurisdictions based on their all-hazard sheltering experience and what is historically relevant for that particular area. 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 must be clearly specified in Extent of Play Agreements. Congregate care staff must also demonstrate the capability to ensure that evacuees, service animals, and vehicles have been monitored for contamination, decontaminated as appropriate, and registered before entering the facility. Individuals arriving at congregate care facilities must have means (e.g., hand stamp, sticker, bracelet, form, etc.) indicating that they, and their service animals and vehicles, where applicable, have been placed in a secure area or monitored, cleared, and found to have no contamination or contamination below the trigger / action level. In accordance with plans / procedures, individuals found to be clean after monitoring do not need to have their vehicle monitored. These individuals do not need confirmation that their vehicle is free from contamination prior to entering the congregate care areas. However, those individuals who are found to be contaminated and are then decontaminated will have their vehicles held in a secure area until they can be monitored and decontaminated (if applicable) and does need confirmation that their vehicle is being held in a secure area or free from contamination prior to entering the congregate care areas. 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 must be verified by providing the evaluator a list of sources with locations and estimates of quantities. All activities must be based on the ORO's plans / procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

Each of the risk or support counties with mass care centers will demonstrate the operation of one mass care center during the out-of-sequence window. Floor plans with flow diagrams of the mass care centers will be available to show organization within the facility and space management during a real emergency. Mass care center locations are listed in the demonstration tables "Demonstration of Mass Care Centers (Attachment A, Section I.B.2)." Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The evaluator will expect to see location and quantities of equipment and supplies needed to open the mass care center, as well as a staffing chart by job title for 24-hour staffing. 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. Mass care shelters should be prepared to discuss methods of coordination and communications. Those facilities identified for the FEMA walk-down evaluation will be supported by a participating representative from the appropriate Red Cross Chapter(s). An interview process will be conducted to determine facility planning and compliance to requirements.

AMERICAN RED CROSS SUPPORT COUNTY CHAPTERS

For All TMINGS EPZ Risk & Support Counties Except for Schuylkill County:

Sandi Wraith | Regional Disaster Officer
American Red Cross | Greater Pennsylvania Region
2801 Liberty Avenue, Pittsburgh, Pennsylvania 15222
Cell: 412-302-4809 | sandi.wraith@redcross.org

For Schuylkill County:

ARC of Eastern PA

Gregory L. Smith | Regional Disaster Program Officer
American Red Cross | Eastern Pennsylvania Region
2221 Chestnut Street Philadelphia, Pennsylvania 22031
215-299-4808 | Gregory.Smith2@redcross.org

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

This sub-element is derived from NUREG-0654/FEMA-REP-1, which requires that OROs have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

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/FEMA-REP-1, F.2; H.10; K.5.a, b; L.1, 4)

Assessment/Extent of Play

Assessment of this Demonstration Criterion may be accomplished during a biennial exercise, an actual event, or drills. FEMA has determined that these capabilities have been enhanced and consistently demonstrated as adequate; therefore, offsite medical services drills need only be evaluated biennially. FEMA will, at the request of the involved ORO, continue to evaluate the drills on an annual basis. All hospitals listed in the plan as medical services hospitals must be evaluated, with a transportation provider, every 2 years. Additional transportation providers will be rotated through the drills in the 8-year exercise cycle. For ambulance providers who do not participate in an evaluated drill during the two-year cycle, training will be provided. This training will be documented in the ALC. Monitoring, decontamination, and contamination control efforts must not delay urgent medical care for the victim. OROs must demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance must be used for response to the victim. However, to avoid taking an ambulance out of service for an extended time, OROs may use any vehicle (e.g., car, truck, or van) to transport the victim to the medical

facility. It is allowable for an ambulance to demonstrate up to the point of departure for the medical facility and then have a non-specialized vehicle transport the “victim(s)” to the medical facility. This option is used in areas where removing an ambulance from service to drive a great distance (over an hour) for a drill would not be in the best interest of the community. Normal communications between the ambulance/dispatcher and receiving medical facility must be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur before releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. In addition, the ambulance crew must 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 victim may be performed before transport or enroute or may be deferred to the medical facility. Contaminated injured individuals transported to medical facilities are monitored as soon as possible to assure that everyone (ambulance and medical facility) is aware of the medical and radiological status of the individual(s). However, if an ambulance defers monitoring to the medical facility, then the ambulance crew presumes that the patient(s) is contaminated and demonstrate appropriate contamination controls until the patient(s) is monitored. Before using the monitoring instruments, monitoring activities must be completed as they would be in an actual emergency. Appropriate contamination control measures must be demonstrated before and during transport and at the receiving medical facility. The medical facility must demonstrate the capability to activate and set up a radiological emergency area for treatment. Medical facilities are expected to have at least one trained physician and one trained nurse to perform and supervise treatment of contaminated injured individuals. Equipment and supplies must be available for treatment of contaminated injured individuals. The medical facility must demonstrate the capability to make decisions on the need for decontamination of the individual, follow appropriate decontamination procedures, and maintain records of all survey measurements and samples taken. All procedures for collection and analysis of samples and decontamination of the individual must be demonstrated or described to the evaluator. Waste water from decontamination operations must be handled according to facility plans/procedures. All activities must be based on the ORO’s plans/procedures and completed as they would be in an actual emergency, unless noted above or otherwise specified in the Extent of Play Agreement.

PEMA Negotiated Extent of Play:

NOTE: This sub-element was evaluated at Good Samaritan Hospital on March 28, 2018, Hanover Hospital on July 10, 2018, Carlisle Regional Medical Center on May 15, 2018, and Gettysburg Hospital on October 10, 2018. Ephrata Hospital is an MS-1 Hospital for both TMINGS and Peach Bottom Atomic Power Station and will demonstrate on October 29, 2019.

ATTACHMENT A – DEMONSTRATION TABLES

I. Plume Phase Exercise

Activities – May 7, 2019

School Districts – Out-of-Sequence Exercise

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 the Department of Homeland Security. 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 eight-year exercise cycle.

Time: 9:00 – 11:00 A.M.

COUNTY	SCHOOL DISTRICT	SCHOOL
Dauphin	Central Dauphin	Lawnton Elementary School Paxtang Elementary School South Side Elementary School
	Derry Township	Early Childhood Center
	Harrisburg	Foose Elementary School
	Lower Dauphin	Conewago Elementary School Nye Elementary School
	Middletown Area	John C. Kunkel Elementary School
	Milton Hershey	Milton Hershey School
	Steelton-Highspire	Steelton-Highspire High School
	Dauphin County Technical School	Single Facility - PEMA
	Sylvan Heights Charter School	Single Facility - FEMA
	Capital Area School for the Arts	Single Facility - PEMA
	Capital Area Intermediate Unit	Single Facility - PEMA
Lancaster	Donegal	ADMIN ONLY - PEMA
	Elizabethtown Area	Bainbridge Elementary School Bear Creek Elementary School Mill Road Elementary School
	Palmyra Area	ADMIN ONLY - PEMA
York	Northeastern	Conewago ES Mount Wolf ES
	Central York	Central York High School
	Dover Area	ADMIN ONLY - PEMA
	Eastern	ADMIN ONLY - PEMA
	Northern	ADMIN ONLY - PEMA
	West Shore	Cross Roads Middle School Fairview Elementary School Hillside Elementary School

PEMA Observation/Evaluation Only

County Emergency Operations Centers (EOCs) – Plume Phase Exercise (Exercise Window is expected to be 4 PM to 9:00 PM). Personnel may pre-stage or should be in area awaiting activation.

COUNTY
Adams
Cumberland
Dauphin
Franklin
Lancaster
Lebanon
York
Schuylkill

Municipal Emergency Operations Centers (EOC) – Plume Phase Exercise (Exercise Window is expected to be 4:30 PM to 9:00 PM)

Personnel may not pre-stage but should be in the area awaiting activation.

Note: **Bold** is federally evaluated, no bold is PEMA observed.

RISK COUNTY	MUNICIPALITY
Cumberland	New Cumberland Borough
	Lower Allen Township
Dauphin	Conewago Township
	Derry Township
	Harrisburg City
	Highspire Borough
	Hummelstown Borough +
	Londonderry Township
	Lower Paxton Township
	Lower Swatara Township
	Middletown Borough
	Paxtang Borough
	Royalton Borough
	South Hanover Township
	Steelton Borough
	Swatara Township
Lancaster	Conoy Township
	East Donegal Township
	*Elizabethtown Borough/West Donegal Township/Mount Joy Township
Lebanon	South Londonderry Township
York	Dover Township

RISK COUNTY	MUNICIPALITY
	Fairview Township
	Goldsboro Borough
	*Eastern York County EMA Hellam Township
	*Newberry Regional EMA -Lewisberry Borough / Newberry Township/York Haven Borough
	*York United EMA –Manchester Twp /Springettsbury Township
	*Northeast Area - Mt. Wolf/E. Manchester /Manchester/Conewago
	*Northern York EMA - Warrington Township

*Joint EOC

+New/Updated EOC

Backup Route Alerting will stage at another location

Back-up Route Alerting

Demonstration by one municipality in each risk county

(May 7, 2019 during Plume Phase Exercise)

BACKUP ROUTE ALERTING	
Cumberland	New Cumberland Borough
Dauphin	Swatara Township
Lancaster	Conoy Township
Lebanon	South Londonderry Township
York	Fairview Twp.

Traffic/Access Control Points

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.

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 municipal evaluations the evening of May 7, 2019

MUNICIPAL/REGIONAL POLICE FORCES	
Cumberland	New Cumberland Borough
Dauphin	Swatara PD
Lancaster	Northwest Regional PD
Lebanon	South Londonderry Township PD
York	Fairview Twp. PD

Bureau of Radiation Protection

Observation of BRP field teams and Radiological Rapid Response Vehicle briefing and equipment check is scheduled to occur out-of-sequence in preparation for the Plume Phase Exercise. This will be held at the Department of Environmental Protection South Central Regional Office.

Time: Out-of-Sequence May 7, 2019 1:30 - 3:00 P.M.

Activities - May 8, 2019

Traffic/Access Control Points (Out-of-Sequence)

Time: 10:00 A.M. – 12:00 Noon

The Pennsylvania State Police will brief at the PSP Harrisburg Barracks located at 8000 Bretz Drive Harrisburg, PA 17112. Those attending the briefing will not deploy to ACP / TCP locations.

Reception Centers (Out-of-Sequence)

Time: 7:00 – 9:30 P.M.

COUNTY	Reception Center Location
Adams	+Gettysburg High School
Cumberland	+Big Spring High School
Dauphin	Exercised 2017
Franklin	+Chambersburg Middle School South
Lancaster	# Hempfield High School (Simulation for Park City Mall
Lebanon	#Lebanon County Career and Tech Center
Schuylkill	+Blue Mountain HS
York	+Northern High School

+ - Co-located Facility with Mass Care and Monitoring / Decontamination Centers

- Co-located Facility with Monitoring/Decontamination Center

Public Monitoring/Decontamination Centers (Out-of-Sequence)

Time: 7:00 – 9:30 P.M.

COUNTY	Public Monitoring and Decontamination Location
Adams	Gettysburg High School
Cumberland	Big Spring High School
Dauphin	Exercised 2017
Franklin	Chambersburg Middle School South
Lancaster	Hempfield High School (Simulation for Park City Mall
Lebanon	Lebanon County Career and Tech Center
Schuylkill	Blue Mountain High School
York	Northern High School

Mass Care Centers (Out-of-Sequence)

Time: 7:00 – 9:30 P.M.

County	Mass Care Location
Adams	Gettysburg High School
Cumberland	Big Spring High School
Dauphin	Halifax HS

Franklin	Chambersburg Middle School South
Lancaster	Manheim Twp. High School
Lebanon	Cedar Crest High School
Schuylkill	Blue Mountain HS
York	Northern High School

*Note: The County will be exercising an unevaluated animal care component during the exercise.

Mass Care Centers (Facility Assessment)

County	Location	Date
Dauphin	Lenkerville ES	March 22, 2019
Lancaster	Manheim Twp MS	March 19, 2019
	Warwick HS	March 19, 2019
	Warwick MS	March 19, 2019
	Cocalico HS	March 19, 2019
	Cocalico MS	March 19, 2019
	Conestoga Valley HS	March 19, 2019
	Conestoga Valley MS	March 19, 2019
	Franklin & Marshal College	March 19, 2019
Adams	Gettysburg MS	March 5, 2019

Emergency Worker Monitoring/Decontamination Stations

(Out of Sequence)

Time: Out-of-Sequence 7:00 – 9:30 P.M.

County	Location
Cumberland	West Shore Bureau of Fire - Station #2 - Lemoyne
Dauphin	Harrisburg Area Community College
Lancaster	Mount Joy Fire Department
Lebanon	Annville Fire Department
York	Dover Borough Fire Department

II. Post Plume Exercise

Not Applicable for this Exercise. The Post-Plume Exercise was last conducted during the week of March 11, 2019 for the Commonwealth.

ATTACHMENT B – LISTING OF PRIOR ISSUES

2019 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

Previous Planning Issues:

Planning Issue 64-17-1e1-P-01: Lebanon County Emergency Worker Monitoring and Decontamination Station at Annville Fire Department

- Survey Team Member did not successfully complete an operational check on a survey instrument. The value indicated by the meter was outside of the operation range on the range sticker but did not remove meter from service.

Planning Issue 64-17-1e1-P-02: York County Reception Center/Public Monitoring and Decontamination Center at Southern School District Complex

- Survey Team Member did not successfully complete an operational check on a survey instrument. The value indicated by the meter was outside of the operation range on the range sticker but did not remove meter from service.

Previous Level 2 Issues:

Level 2 Issue 64-17-3a1-L2-01: Dover Township Emergency Operations Center

- The Radiological Officer dispatched teams to the field without Permanent Reading Dosimetry or Potassium Iodide.
- **Issue was successfully re-demonstrated**