

# Three Mile Island Generating Station Exercise – April 14, 2009

Final Report – Radiological Emergency Preparedness  
Program

*June 19, 2009*



# FEMA

*FEMA Region III*





# FEMA

## **Final Exercise Report**

### **Three Mile Island Generating Station**

Licensee: **Exelon Nuclear**

Exercise Date: **April 14, 2009**

Report Date: **June 19, 2009**

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**U.S. DEPARTMENT OF HOMELAND SECURITY  
NATIONAL PREPAREDNESS DIVISION  
RADIOLOGICAL EMERGENCY PREPAREDNESS  
TECHNOLOGICAL HAZARDS BRANCH**

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# I. EXECUTIVE SUMMARY

On April 14, 2009, a full-scale plume exercise was conducted in the 10-mile plume exposure pathway, emergency planning zone (EPZ) around the Three Mile Island Generating Station (TMI) by the Federal Emergency Management Agency (FEMA), Region III. Out-of-sequence demonstrations were conducted on April 14 and 15, 2009. The purpose of the exercise and the out-of-sequence demonstrations was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise and out-of-sequence demonstrations were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The most recent prior full-scale exercise at this site was conducted on April 17, 2007.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania, the risk counties of Cumberland, Dauphin, Lancaster, Lebanon, and York; the risk jurisdictions of Conewago Township, Conoy Township, Fairview Township, Goldsboro Borough, Hellam Township, Hummelstown Borough, Lower Allen Township, Middletown/Royalton Boroughs, South Londonderry Township, and York Haven Borough; and the support counties of Adams, Franklin, and Schuylkill who were evaluated at this exercise.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

This report contains the final evaluation of the biennial exercise and the evaluation of the following out-of-sequence activities:

- *Reception Center/Monitoring and Decontamination and Mass Care:* Conducted on April 15, 2009 in Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, and Schuylkill Counties.
- *Emergency Worker Monitoring and Decontamination:* Conducted on April 15, 2009 in Cumberland, Lancaster, Lebanon, and York Counties.
- *Traffic/Access Control:* Conducted on April 15, 2009 at the Harrisburg State Police Barracks.
- *Schools:* Conducted on April 14, 2009 in Dauphin, Lancaster, Lebanon, and York Counties.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies and three Areas Requiring Corrective Action (ARCAs) identified as a result of this exercise; one of the ARCAs was successfully re-demonstrated during the exercise. Two

ARCAs from a previous exercise were successfully demonstrated at this exercise; one additional previous ARCA was closed administratively. Three new planning issues were identified, seven planning issues from previous exercises were successfully demonstrated, and three planning issues from a previous exercise remain unresolved (see Appendix 5 for all planning issues).

## II. Introduction

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 Generating Station accident in March 1979.

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

FEMA's responsibilities in radiological emergency planning for fixed nuclear facilities include the following:

- Taking the lead in offsite emergency planning and in the review and evaluation of Radiological Emergency Response Plans (RERPs) and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, September 14, 1993; and
- Coordinating the activities of the following Federal agencies with responsibilities in the radiological emergency planning process:
  - U.S. Department of Commerce,
  - U.S. Nuclear Regulatory Commission,
  - U.S. Environmental Protection Agency,
  - U.S. Department of Energy,
  - U.S. Department of Health and Human Services,
  - U.S. Department of Transportation,
  - U.S. Department of Agriculture,
  - U.S. Department of the Interior, and
  - U.S. Food and Drug Administration.

Representatives of these agencies serve on the Region III Radiological Assistance Committee (RAC), which is chaired by FEMA.

A REP exercise was conducted on April 14, 2009, 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 Three Mile Island Generating Station (TMI). The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the Federal evaluator team, with final determinations made by the FEMA Region III RAC Chairperson and approved by FEMA Headquarters.

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

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

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

Section III of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section of the report contains a description of the plume pathway emergency planning zone (EPZ), a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise evaluation areas at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains: (1) descriptions of all Deficiencies and Areas Requiring Corrective Action (ARCAs) assessed during this exercise, recommended corrective actions, and the Tribal, State, and local governments' schedule of corrective actions for each identified exercise issue and (2) descriptions of ARCAs assessed during previous exercises and resolved at this exercise,

including the corrective action demonstrated, as well as ARCAs assessed during previous exercises and scheduled for demonstration at this exercise which remain unresolved.

The final section of the report is comprised of the appendices, which present the following supplementary information: acronyms and abbreviations, exercise evaluators and team leaders, exercise evaluation area criteria and extent of play agreement, and the exercise scenario. It also presents information on planning issues (both new planning issues identified during this exercise and resolved planning issues identified during previous exercises).

### III. Exercise Overview

Contained in this section are data and basic information relevant to the April 14, 2009 exercise to test the off-site emergency response capabilities in the area surrounding Three Mile Island Generating Station (TMI). This section of the exercise report includes a description of the plume pathway emergency planning zone (EPZ), a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

#### A. Plume Emergency Planning Zone Description

The TMI Generating Station (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 TMI 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 and GPU Nuclear Corporation own all the land within the exclusion area.

The TMI plant is located in south-central Pennsylvania in Londonderry Township, Dauphin County. 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, 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 mean sea level. Hills on both sides of the river in this vicinity rise to elevations of over 500 feet. The plant grade is 300 feet above mean sea level.

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. Conrail 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 TMI Generating Station is located 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 in excess of 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, Norfolk Southern, 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 county is about 38 inches, and the average annual temperature is 52 degrees F.

On the basis of the 2000 census, the total population of the 10-mile EPZ is 201,800. There are 96 sirens used to provide coverage of the plume exposure pathway EPZ. The county in which it is located operates each siren system.

## **B. Exercise Participants**

The following agencies, organizations, and units of government participated at the jurisdictions listed below during the TMI out-of-sequence activities on April 14 and 15, 2009, or the exercise on April 14, 2009.

### **COMMONWEALTH OF PENNSYLVANIA**

Pennsylvania Bureau of Radiation Protection  
Pennsylvania Department of Agriculture  
Pennsylvania Department of Conservation and Natural Resources  
Pennsylvania Department of Corrections  
Pennsylvania Department of Education  
Pennsylvania Department of Environmental Protection  
Pennsylvania Department of General Services  
Pennsylvania Department of Health  
Pennsylvania Department of Military and Veterans Affairs  
Pennsylvania Department of Public Welfare  
Pennsylvania Department of Transportation  
Pennsylvania Emergency Management Agency  
Pennsylvania Fish and Boat Commission  
Pennsylvania Game Commission  
Pennsylvania Office of Administration  
Pennsylvania Public Utility Commission  
Pennsylvania State Police  
Pennsylvania Turnpike Commission

### **RISK JURISDICTIONS**

#### **Cumberland County**

Carlisle Barracks  
Cumberland County 911 Communications  
Cumberland County Board of Elections  
Cumberland County Chapter American Red Cross  
Cumberland County Commissioners  
Cumberland County Department of Public Safety  
Cumberland County Finance Department  
Cumberland County Geospatial Imaging System (GIS) Department  
Cumberland County Mass Causality Incident Response Team (MCIRT)  
Cumberland County Penn DOT (Department of Transportation) District 8  
Cumberland County Prison  
Cumberland County Public Safety Information Team (PSIT)  
Cumberland County Sheriff's Office  
Cumberland County Special Hazards Operations Team (SHOT)

Cumberland County Special Police Emergency Response Team (SPERT)  
Cumberland County Tax Assessment  
Cumberland County Transportation Department  
Cumberland/Perry Mental Health-Mental Retardation  
Friendship Hose Company, Newville  
Lower Allen Township Commissioners  
Lower Allen Township Director of Public Safety  
Lower Allen Township Emergency Management Agency  
Lower Allen Township Emergency Medical Services  
Lower Allen Township Emergency Operations Center Staff  
Lower Allen Township Fire  
Lower Allen Township Police  
Lower Allen Township Public Works  
New Cumberland Borough Council  
New Cumberland Borough Manager  
New Cumberland Emergency Management Agency  
New Cumberland Emergency Medical Services  
New Cumberland Emergency Operations Center Staff  
New Cumberland Fire  
New Cumberland Police  
New Cumberland Public Works  
Penn State Agriculture Extension Office  
Pennsylvania Emergency Management Agency Central Area Office  
Pennsylvania National Guard  
Pennsylvania State Police Carlisle and Newville (Turnpike) Stations  
Shippensburg University  
Shippensburg University Police  
South Mountain Repeater Association  
US Department of Agriculture Farm Service Agency  
Vigilant Hose Company, Shippensburg  
West End Fire and Rescue, Shippensburg  
West Shore Bureau of Fire Stations 1 and 2  
West Shore Emergency Medical Services

### **Dauphin County**

American Red Cross of the Susquehanna Valley  
Borough of Hummelstown Council  
Conewago Township  
Dauphin County Animal Response Team  
Dauphin County Commissioner's Office  
Dauphin County Cooperative Extension  
Dauphin County Criminal Investigation Division  
Dauphin County Department of Safety and Security  
Dauphin County Emergency Management Agency  
Dauphin County Hazmat

Dauphin County Mental Health/Mental Retardation Crisis Office  
Dauphin County Personnel and Payroll Department  
Halifax Fire Department  
Hummelstown Chemical Fire Company Fire Police  
Middletown Council  
Middletown Fire Department  
Middletown Police Department  
Middletown Public Works  
Pennsylvania Emergency Management Agency  
Pennsylvania State Police  
Penn State Cooperative Extension  
Penn State University  
Royalton Borough Council  
Williamstown Emergency Management

### **Lancaster County**

Bainbridge Fire Department  
Conoy Township Board of Supervisors  
Conoy Township Emergency Management Agency  
Conoy Township Public Works  
Conoy Township Road Department  
Hempfield Fire Department  
Lancaster County Hazmat  
Marietta Volunteer Fire Company  
Susquehanna Regional Police Department

### **Lebanon County**

American Red Cross – Lebanon County Chapter  
Annville Union Hose Company  
Campbelltown Fire and Rescue  
Lawn Fire and Rescue  
Lebanon County Agriculture  
Lebanon County Bi Lingual Translator  
Lebanon County Career and Technology Center  
Lebanon County Commissioners  
Lebanon County Department of Public Works  
Lebanon County Department of Transportation  
Lebanon County Emergency Management Agency  
Lebanon County Emergency Medical Services  
Lebanon County Fire Department  
Lebanon County Hazmat Team  
Lebanon County School Services  
Lebanon County Sheriff's Office  
Mount Greta Fire Department  
Northern Lebanon School District

Pennsylvania Emergency Management Agency  
Pennsylvania State Police  
Radio Amateur Civil Emergency Services (RACES)  
South Londonderry Police Department  
South Londonderry Township Emergency Management Agency  
Waterworks Fire Department

### **York County**

Eastern York County Emergency Medical Services  
Fairview Township Board of Supervisors  
Fairview Township Emergency Management  
Fairview Township Emergency Medical Services  
Fairview Township Fire  
Fairview Township Police  
Fairview Township Public Works  
Fairview Township Security  
Fairview Township Transportation  
Goldsboro Borough Emergency Management  
Hellam Township Emergency Management  
Hellam Township Fire Department  
Hellam Township Police Department  
Lower Winsdor Township  
Newberry Township Police Department  
Springetts Fire Department  
Wrightsville Fire Company  
York Area United Fire and Rescue Company  
York County Hazmat Team  
York County Office of Emergency Management  
York Haven Borough Council  
York Haven Borough Emergency Management  
York Haven Borough Fire Department  
York Haven Emergency Medical Services

### **SUPPORT JURISDICTIONS**

#### **Adams County**

Adams County Commissioners  
Adams County Department of Emergency Services  
Adams County Fire Police  
Adams County Geographical Information System (GIS) Office  
Gettysburg Emergency Medical Services  
Gettysburg Fire Department  
Gettysburg Hospital  
Heidlersburg Fire Department

Pennsylvania Emergency Management Agency  
Pennsylvania State Police

**Franklin County**

Franklin County Commissioner's Board  
Franklin County Department of Emergency Services  
Franklin County Emergency Management Agency  
Franklin County Fire  
Franklin County Law Enforcement  
Pennsylvania Emergency Management Agency  
Pennsylvania State Co-Op Extension  
South Central Task Force

**Schuylkill County**

Pennsylvania Department of Corrections  
Pennsylvania Department of Transportation  
Pennsylvania Emergency Management Agency  
Pennsylvania State Police  
Pottsville Fire Department  
Pottsville Police Department  
Schuylkill County Animal Response Team  
Schuylkill County Board of Health  
Schuylkill County Courthouse  
Schuylkill County Department of Health  
Schuylkill County Department of Public Safety  
Schuylkill County Emergency Management Agency  
Schuylkill County Emergency Medical Services  
Schuylkill County Fire/Rescue Services  
Schuylkill County Geospatial Information Systems  
Schuylkill Haven Fire Department  
Schuylkill Haven Police Department

**SCHOOL DISTRICTS**

**Dauphin County**

Central Dauphin School District  
Chambers Hill Elementary School  
Rutherford Elementary School  
Central Dauphin East Middle School

Derry Township School District  
Hershey High School  
Hershey Primary Elementary School

Harrisburg School District

Foose School  
Melrose School  
Roland School

Lower Dauphin School District

Londonderry Elementary School  
Lower Dauphin Middle School

Middletown Area School District

Middletown Fink Elementary School  
Middletown Middle School  
Reid Elementary School

Milton Hershey School District

Milton Hershey School

Steelton-Highspire School District

Steelton-Highspire Elementary School

**Lancaster County**

Donegal School District

Riverview Elementary School  
Donegal Kindergarten

Elizabethtown Area School District

Elizabethtown High School  
Rheems Elementary School

**Lebanon County**

Palmyra Area School District

Pine Street Elementary School

**York County**

Central York School District

Sinking Springs Elementary School

Dover Area School District

Dover Area High School  
Dover Area Elementary School

Eastern School District

Eastern High School

Northeastern School District  
Orendorf Elementary School  
Shallow Brook Intermediate  
Northeastern High School

West Shore School District  
Red Land High School  
Fishing Creek Elementary School  
Mount Zion Elementary School  
Newberry Elementary School

### **PRIVATE/VOLUNTEER ORGANIZATIONS**

The following private and volunteer organizations participated in the TMI exercise at many different locations throughout the area. We thank them and all those who volunteer their services to State, county, and municipal governments during emergencies.

American Red Cross, including the following local chapters:

Adams County Chapter  
Cumberland County Chapter  
Franklin County Chapter  
Greater Hanover Chapter  
Harrisburg Chapter  
Lebanon County Chapter  
Middletown Chapter  
Reading Chapter  
Sunbury Chapter  
Susquehanna Valley Chapter  
York County Chapter

Amateur Radio Emergency Services (ARES) and Radio Amateur Civil Emergency Services (RACES), including the following clubs:

Adams County Radio Amateur Civil Emergency Services  
Central Pennsylvania Repeater Association  
Dauphin County Radio Amateur Civil Emergency Service  
Fairview Township Amateur Radio Emergency Services  
Schuylkill Amateur Repeater Association  
York County Amateur Radio Club

E&B Transportation Company  
Emergency Health Service Federation, Inc.  
Exelon Nuclear Corporation  
Fairview Township Volunteers  
Northwest Emergency Medical Services  
Volunteer Organizations Active in Disasters

### **C. Exercise Timeline**

Table 1, on the following page, presents the times at which key events and activities occurred during the TMI exercise on April 14, 2009. Also included are times notifications were made to the participating jurisdictions/functional entities.

**TABLE 1. EXERCISE TIMELINE**DATE AND SITE: *April 14, 2009 Three Mile Island Generating Station*

Emergency Classification Level or Event	Time Utility Declared	Time Notification Was Received or Action Was Taken					
		State EOC	Accident Assessment BRP	Commonwealth Media Operations Center	Exelon JIC	Cumberland Co. EOC	Lower Allen Twp. EOC
<b>Unusual Event</b>	1550	1559	1603	1610	N/A	1559	N/A
<b>Alert</b>	1646	1657	1657	1710	N/A	1657	1707
<b>Site Area Emergency</b>	1825	1832	1832	1840	1826	1832	1852
<b>General Emergency</b>	2013	2023	2023	2035	2015	2023	2032
<b>Simulated Radiation Release Started</b>	1955	2023	1955	N/R	2031	2023	2032
<b>Simulated Radiation Release Terminated</b>	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Facility Declared Operational</b>		1710	1710	1715	1809	1708	1728
<b>Governor's Declaration of State Emergency</b>		1915	N/A	1915	2009	1941	1945
<b>Exercise Terminated</b>		2147	2147	2147	2131	2147	2134
<b>Precautionary Actions:</b>							
restrict airspace		1904	1904	1943	1942	1906	N/R
restrict rail traffic		1839	1839	1928	1927	1906	N/R
restrict water traffic		1920	1920	2035	2057	1920	N/R
shelter livestock, place on stored feed		1842	1842	2011	2011	1842	N/R
<b>1<sup>st</sup> A&amp;N Decision (State [made]; local [received])</b>							
Tune TV/radio to EAS station		1905	1905	1905	1905	1905	1905
<b>1<sup>st</sup> Siren Activation</b>		1915		1915		1915	
<b>1<sup>st</sup> EAS or EBS Message</b>		1918		1918		1918	
<b>2<sup>nd</sup> A&amp;N Decision (State [made]; local [received])</b>							
Evacuate 360° to 10 miles, KI use General Public		2100	2036	2036	N/R	2100	2104
<b>2<sup>nd</sup> Siren Activation</b>		2110				2110	
<b>2<sup>nd</sup> EAS or EBS Message</b>		2113					
<b>KI Administration Decision:</b>							
Emergency workers advised to TAKE KI		2100	2036	2036	2100	2100	2100
General public advised to take KI		2113	2113	2113	2113	2113	2113

Legend: N/A – Not Applicable

**TABLE 1. EXERCISE TIMELINE**

DATE AND SITE: April 14, 2009 Three Mile Island Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time Notification Was Received or Action Was Taken							
		Dauphin Co. EOC	Conewago Twp. EOC	Hummels-town Boro. EOC	Middletown/Royalton Boros. EOC	Lancaster Co. EOC	Conoy Twp. EOC	Lebanon Co. EOC	South Londonderry Twp. EOC
Unusual Event	1550	1559	N/A	N/A	N/A	1559	N/A	1559	N/A
Alert	1646	1657	1657	1724	1720	1657	1703	1657	1719
Site Area Emergency	1825	1832	1855	1845	1843	1832	1843	1832	1839
General Emergency	2013	2023	2035	2039	2034	2023	2029	2023	2031
Simulated Radiation Release Started	1955	2023	2035	2039	N/R	2023	2029	2023	2031
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1710	1752	1755	1736	1752	1720	1700	1711
Governor's Declaration of State of Emergency		1915	N/R	N/R	N/R	1915	1915	1915	2050
Exercise Terminated		2158	2140	2140	2156	2145	2130	2145	2153
<b>Precautionary Actions:</b>									
restrict airspace		1906	N/R	N/R	N/R	1906	1944	1906	1919
restrict rail traffic		1906	N/R	N/R	2058	1906	1944	1906	1941
restrict water traffic		1920	N/R	N/R	N/R	1920	1944	1920	1941
shelter livestock, place on stored feed		1842	N/R	N/R	1904	1842	1944	1842	1924
<b>1<sup>st</sup> A&amp;N Decision (State [made]; local [received])</b>									
Tune TV/radio to EAS station		1905	N/R	N/R	N/R	1905	1909	1905	1915
<b>1<sup>st</sup> Siren Activation</b>		1915				1915		1915	1958
<b>1<sup>st</sup> EAS or EBS Message</b>								1918	
<b>2<sup>nd</sup> A&amp;N Decision (State [made]; local [received])</b>									
Evacuate 360° to 10 miles, KI use General Public		2100	2107	2106	2107	2100	2107	2100	2108
<b>2<sup>nd</sup> Siren Activation</b>		2110				2110		2110	
<b>2<sup>nd</sup> EAS or EBS Message</b>									
<b>KI Administration Decision:</b>									
Emergency workers advised to TAKE KI		2100	2107	2110	2107	2100	2110	2100	2112
General public advised to take KI		2113	2113	2113	2113	2113	2113	2113	2113

Legend: N/A – Not Applicable

**TABLE 1. EXERCISE TIMELINE**DATE AND SITE: *April 14, 2009 Three Mile Island Generating Station*

Emergency Classification Level or Event	Time Utility Declared	Time Notification Was Received or Action Was Taken							
		York Co. EOC	Fairview Twp. EOC	Goldsboro Boro. EOC	Hellam Twp. EOC	York Haven Boro. EOC	Adams Co. EOC	Franklin Co. EOC	Schuylkill Co. EOC
Unusual Event	1550	1610	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	1646	1712	1713	1715	1712	1715	1711	1724	1715
Site Area Emergency	1825	1844	1850	1850	1850	1850	1840	1845	1849
General Emergency	2013	2035	2043	2042	2038	2044	2044	2036	2038
Simulated Radiation Release Started	1955	2035	2043	2042	2038	2044	2044	2036	2038
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1726	1805	1810	1754	1755	1735	1725	1723
Governor's Declaration of State of Emergency		1940	1944	1947	1944	1943	1947	1943	1937
Exercise Terminated		2137	2130	2124	2130	2140	2142	2140	2110
<b>Precautionary Actions:</b>									
restrict airspace		1915	1932	1947	1932	1919	1919	1919	1919
restrict rail traffic		1929	1940	1947	1940	1941	1904	1904	1924
restrict water traffic		1926	1940	1947	1940	1941	1920	1920	1920
shelter livestock, place on stored feed		1842	1922	1924	1919	1924	1904	1904	1920
<b>1<sup>st</sup> A&amp;N Decision (State [made]; local [received])</b>									
Tune TV/radio to EAS station		1905	1915	1910	1910	1910	1910	1910	1910
<b>1<sup>st</sup> Siren Activation</b>		1915							
<b>1<sup>st</sup> EAS Message</b>									
<b>2<sup>nd</sup> A&amp;N Decision (State [made]; local [received])</b>									
Evacuate 360° to 10 miles, KI use General Public		2100	2110	2110	2108	2105	2100	2100	2100
<b>2<sup>nd</sup> Siren Activation</b>		2110							
<b>2<sup>nd</sup> EAS Message</b>									
<b>KI Administration Decision:</b>									
Emergency workers advised to TAKE KI		2100	2110	2110	2108	2105	2100	2100	2100
General public advised to take KI		2113	2113	2113	2113	2113	2113	2113	2113

Legend: N/A – Not Applicable

## IV. Evaluation and Results

Contained in this section are the results and findings of the evaluation of all jurisdictions and locations that participated in the April 14, 2009 biennial Radiological Emergency Preparedness (REP) exercise. The exercise was held to test the offsite emergency response capabilities of local governments in the 10-mile Emergency Planning Zone (EPZ) surrounding the Three Mile Island Generating Station (TMI).

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the exercise evaluation area criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the exercise evaluation area criteria and the extent-of-play agreement used in this exercise are found in Appendix 3 of this report.

### A. Summary Results of Exercise Evaluation

The matrix presented in Table 2, on the following pages, presents the status of the exercise evaluation area criteria from the REP Exercise Evaluation Methodology that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise evaluation area criteria are listed by number and the demonstration status of the criteria is indicated by the use of the following letters:

- M Met (No Deficiency or Area Requiring Corrective Action (ARCA) assessed and no unresolved ARCAs from prior exercises)
- A ARCA(s) assessed
- A<sup>1</sup> ARCA(s) assessed, but successfully re-demonstrated
- R Resolved ARCA(s) from prior exercises



## TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION

DATE AND SITE: April 14, 2009 Three Mile Island Generating Station

JURISDICTION/LOCATION	1. a. 1	1. b. 1	1. c. 1	1. d. 1	1. e. 1	2. a. 1	2. b. 1	2. b. 2	2. c. 1	2. d. 1	2. e. 1	3. a. 1	3. b. 1	3. c. 1	3. c. 2	3. d. 1	3. d. 2	3. e. 1	3. e. 2	3. f. 1	4. a. 1	4. a. 2	4. a. 3	4. b. 1	4. c. 1	5. a. 1	5. a. 2	5. a. 3	5. b. 1	6. a. 1	6. b. 1	6. c. 1	6. d. 1			
<b>Lancaster County</b>																																				
Lancaster County EOC	M		M	M	A	M			M			M	M	M	M	M	M										M			M						
Mon/Decon and Mass Care Center (Hempfield HS)		M			M							M																		M/R			M			
EW Mon/Decon Station (Marietta Fire Company)		M			M							M	M																	M						
Conoy Twp. EOC	M	M	M	M	M	M			M			A	M	M	M	M	M										M			M						
Back-up Route Alerting (Conoy Twp.)				M	M							M	M																M							
<b>Lebanon County</b>																																				
Lebanon County EOC	M		M	M	M	M			M			M	M	M	M	M	M										M			M						
Reception Center & Mon/Decon (Lebanon County Career & Tech Center)		M			M							M																		M						
Mass Care Center (Northern Lebanon HS)					M							M																					M			
EW Mon/Decon Station (Annville Union Hose Fire Company)		M			M							M	M																	M		M				
South Londonderry Twp. EOC	M		M	M	M	M			M			M	M	M	M	M	M										M									
Back-up Route Alerting (South Londonderry Twp.)				M	M							M	M/R																M/R							
<b>York County</b>																																				
York County EOC (observed only)																																				
EW Mon/Decon Station (Springetts Fire Company #16)		M			M							M																			M		M			
Fairview Twp. EOC	M	M	M	M	M	M			M			M	M	M	M	M	M										M									
Goldsboro Boro. EOC	M		M	M	M	M			M			M	M	M	M	M	M										M									
Hellam Twp. EOC	M		M	M	M	M			M			M	M	M	M	M	M										M									
Back-up Route Alerting (Hellam Twp.)				M	M							M	M																M							
York Haven Boro. EOC	M		M	M	M	M			M			M	M	M	M	M	M										M									
<b>SUPPORT JURISDICTIONS</b>																																				
<b>Adams County</b>																																				
Adams County EOC	M		M	M	M																													M		
Mon/Decon Center (Gettysburg HS)		M			M							M																			M					
Reception & Mass Care (Gettysburg HS)		M			M							M																			M			M		
<b>Franklin County</b>																																				
Franklin County EOC	M		M	M	M																													M		
Reception Center, Mon/Decon & Mass Care Center (Scotland School)		M			M							M																				M			M	

LEGEND: M = Met (no Deficiency or ARCA(s) assessed)  
R = Resolved ARCA(s) from prior exercises

A = ARCA(s) assessed  
Blank = Not scheduled for demonstration

A<sup>1</sup> = ARCA(s) assessed but successfully re-demonstrated

**TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION**

**DATE AND SITE: April 14, 2009 Three Mile Island Generating Station**

JURISDICTION/LOCATION	1. a. 1	1. b. 1	1. c. 1	1. d. 1	1. e. 1	2. a. 1	2. b. 1	2. b. 2	2. c. 1	2. d. 1	2. e. 1	3. a. 1	3. b. 1	3. c. 1	3. c. 2	3. d. 1	3. d. 2	3. e. 1	3. e. 2	3. f. 1	4. a. 1	4. a. 2	4. a. 3	4. b. 1	4. c. 1	5. a. 1	5. a. 2	5. a. 3	5. b. 1	6. a. 1	6. b. 1	6. c. 1	6. d. 1	
<b>Schuylkill County</b>																																		
Schuylkill County EOC	M		M	M	M																													M
Reception Center (Blue Mountain HS)		M			M							M																					M	
Reception Center, Mon/Decon & Mass Care (Schuylkill Haven HS)		M			M							M																				M		M
<b>SCHOOLS</b>																																		
<b>Dauphin County School Districts</b>																																		
Central Dauphin SD (Chambers Hill ES)															M																			
Central Dauphin SD (Rutherford ES)															M																			
Central Dauphin SD (Central Dauphin East MS)															M																			
Derry Township SD (Hershey HS)															M																			
Derry Township SD (Hershey Primary ES)															M																			
Harrisburg SD (Foose School)															M																			
Harrisburg SD (Melrose School)															M																			
Harrisburg SD (Roland School)															M																			
Lower Dauphin SD (Londonderry ES)															M																			
Lower Dauphin SD (Lower Dauphin MS)															M																			
Middletown Area SD (Middletown Fink ES)															M																			
Middletown Area SD (Middletown MS)															M																			
Middletown Area SD (Reid ES)															M																			
Milton Hershey SD (Milton Hershey School)															M																			
Steelton-Highspire SD (Steelton-Highspire ES)															M																			
<b>Lancaster County School Districts</b>																																		
Donegal SD (Riverview ES)															M																			
Donegal SD (Donegal Kindergarten)															M																			
Elizabethtown Area SD (Elizabethtown HS)															M																			
Elizabethtown Area SD (Rheems ES)															M																			

LEGEND: M = Met (no Deficiency or ARCA(s) assessed)  
R = Resolved ARCA(s) from prior exercises

A = ARCA(s) assessed  
Blank = Not scheduled for demonstration

A<sup>1</sup> = ARCA(s) assessed but successfully re-demonstrated

**TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION**  
**DATE AND SITE: April 14, 2009 Three Mile Island Generating Station**

JURISDICTION/LOCATION	1. a. 1	1. b. 1	1. c. 1	1. d. 1	1. e. 1	2. a. 1	2. b. 1	2. b. 2	2. c. 1	2. d. 1	2. e. 1	3. a. 1	3. b. 1	3. c. 1	3. c. 2	3. d. 1	3. d. 2	3. e. 1	3. e. 2	3. f. 1	4. a. 1	4. a. 2	4. a. 3	4. b. 1	4. c. 1	5. a. 1	5. a. 2	5. a. 3	5. b. 1	6. a. 1	6. b. 1	6. c. 1	6. d. 1				
<b>Lebanon County School Districts</b>																																					
Palmyra Area SD (Pine Street ES)															M																						
<b>York County School Districts</b>																																					
Central York SD (Sinking Springs ES)															M																						
Dover Area SD (Dover Area HS)															M																						
Dover Area SD (Dover Area ES)															M																						
Eastern SD (Eastern HS)															M																						
Northeastern SD (Orendorf ES)															M																						
Northeastern SD (Shallow Brook Intermediate)															M																						
Northeastern SD (Northeastern HS)															M																						
West Shore SD (Fishing Creek ES)															M																						
West Shore SD (Mount Zion ES)															M																						
West Shore SD (Newberry ES)															M																						

LEGEND: M = Met (no Deficiency or ARCA(s) assessed)  
 R = Resolved ARCA(s) from prior exercises

A = ARCA(s) assessed  
 Blank = Not scheduled for demonstration

A<sup>1</sup> = ARCA(s) assessed but successfully re-demonstrated

## B. Status of Jurisdictions Evaluated

This subsection provides information on the evaluation of each participating and functional entity in a jurisdiction-based, issues-only format. Presented below are definitions of the terms used in this subsection relative to criteria demonstration status.

- **Met** – Listing of the demonstrated exercise evaluation area criteria under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** – Listing of the demonstrated exercise evaluation area criteria under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Action** – Listing of the demonstrated exercise evaluation area criteria under which one or more ARCAs were assessed during the current exercise. Included is a description of the ARCAs assessed during this exercise and the recommended corrective actions to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** – Listing of the exercise evaluation area criteria that were scheduled to be demonstrated during this exercise, but were not demonstrated and the reason they were not demonstrated.
- **Prior ARCAs – Resolved** – Descriptions of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.
- **Prior ARCAs – Unresolved** – Descriptions of ARCAs assessed during prior exercises that were not resolved in this exercise. Included are the reasons the ARCAs remain unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

The following are definitions of the two types of exercise issues that are discussed in this report.

- A **Deficiency** is defined in the FEMA-REP-14 as “...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding 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.”

- An **ARCA** is defined in the FEMA-REP-14 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.”

The Federal Emergency Management Agency (FEMA) has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues among FEMA Regions and site-specific exercise reports within each Region. It is also used to expedite tracking of exercise issues on a nationwide basis.

The identifying number for Deficiencies and ARCAs includes the following elements, with each element separated by a hyphen (-).

- **Plant Site Identifier** – A two-digit number corresponding to the Utility Billable Plant Site Codes.
- **Exercise Year** – The last two digits of the year the exercise was conducted.
- **Evaluation Area Criterion** – A letter and number corresponding to the criteria in the FEMA REP Exercise Evaluation Methodology.
- **Issue Classification Identifier** – (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Issue Identification Number** – A separate two digit indexing number assigned to each issue identified in the exercise.

## 1.0 STATE/COMMONWEALTH

### 1.1 State Emergency Operations Center

- a. **MET:** 1.a.1 2.a.1 3.b.1 5.a.1 6.c.1  
1.c.1 2.b.2 3.d.1  
1.d.1 3.d.2  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

### 1.2 Commonwealth Media Operations Center

- a. **MET:** 1.d.1 5.a.1  
5.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

### 1.3 Joint Information Center (Exelon)

- a. **MET:** 5.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**1.4 Accident Assessment Center (State Emergency Operations Center/Bureau of Radiation Protection)**

- a. **MET:** 1.a.1 2.a.1 4.a.2  
1.c.1 2.b.1  
1.d.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**1.5 Mobile Vehicle (Bureau of Radiation Protection)**

- a. **MET:** 1.a.1 3.a.1 4.a.1  
1.d.1 3.b.1 4.a.2  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**1.6 State Field Air Monitoring Team A**

- a. **MET:** 1.d.1 3.a.1 4.a.1  
1.e.1 3.b.1 4.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**1.7 State Field Air Monitoring Team B**

- a. **MET:** 1.d.1 3.a.1 4.a.1  
1.e.1 3.b.1 4.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**1.8 State Traffic/Access Control Points (Harrisburg Barracks)**

- a. **MET:** 1.d.1 3.a.1  
1.e.1 3.b.1  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

## 2.0 RISK JURISDICTIONS

### 2.1 Cumberland County

#### 2.1.1 Cumberland County Emergency Operations Center

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1 5.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

#### 2.1.2 Reception Center, Monitoring/Decontamination & Mass Care Center (Shippensburg University)

- a. **MET:** 1.b.1 3.a.1 6.c.1  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** One (6.a.1 Re-demonstrated)

##### **Issue Number: 64-09-6.a.1-A-01 (6.a.1 Re-demonstrated)**

**Condition:** During vehicle monitoring at Shippensburg University, the individual performing the survey was holding the probe three to four inches away from the vehicle and did not adequately survey the wheel wells where contamination is most likely to be found.

**Possible Cause:** Lack of adequate training in vehicle survey techniques.

**Reference:** NUREG-0654, K.5.b

**Effect:** Improper survey techniques could have resulted in not detecting contamination. As a result contamination could have been spread when the vehicle was released.

**Corrective Action Demonstrated:** Prior to re-demonstration, the controller trained the individual on proper survey techniques including why they are used. The monitor then resumed the vehicle survey and successfully completed it.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.1.3 Emergency Worker Monitoring/Decontamination Station (West Shore Fire Station #2, Lemoyne)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 3.b.1 6.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.1.4 Lower Allen Township Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.b.1 2.c.1 3.b.1  
1.c.1 3.c.1  
1.d.1 3.c.2  
1.e.1 3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.1.4.1 Back-up Route Alerting (Lower Allen Township)**

- a. **MET:** 1.d.1 3.a.1 5.a.3  
1.e.1 3.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2 Dauphin County**

**2.2.1 Dauphin County Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1 5.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.2 Reception Center & Monitoring/Decontamination (Williams Valley High School)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 6.c.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.3 Mass Care Center (Millersburg Middle School/High School)**

- a. **MET:** 1.e.1 3.a.1 6.c.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.4 Mass Care Center (Upper Dauphin High School)**

- a. **MET:** 1.e.1 3.a.1 6.c.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.5 Conewago Township Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.6 Hummelstown Borough Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.7 Middletown/Royalton Boroughs Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2

- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.2.7.1 Back-up Route Alerting (Middletown Borough)**

- a. **MET:** 1.d.1 3.a.1 5.a.3  
1.e.1 3.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.3 Lancaster County**

**2.3.1 Lancaster County Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1 5.b.1  
1.d.1 3.c.1  
3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** One (1.e.1)

**Issue Number: 64-09-1.e.1-A-02**

**Condition:** Direct reading dosimeters (DRDs) have not been inspected for electrical leakage for over a year (since January 26, 2008).

**Possible Cause:** The Emergency Management Agency did not submit the equipment for the annual leakage testing.

**Reference:** NUREG-0654, H.10

**Effect:** The dosimetry equipment might not accurately measure radiation exposure, causing an individual to receive more radiation exposure than permitted/recommended.

**Recommendation:** Make sure that all DRDs are tested for electrical leakage at least annually.

**Schedule of Corrective Actions:** Agreed. Measures will be implemented to ensure leak tests are conducted annually and the results are recorded.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.3.2 Monitoring/Decontamination & Mass Care Center (Hempfield High School)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 6.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** One

**Issue Number: 64-95-18-A-17 (6.a.1)**

**Condition:** (Lancaster County Monitoring/Decontamination Center – Centerville Jr. High School)  
Although the monitoring/decontamination forms were filled out properly, there was a misunderstanding about what to do with the forms afterward. There is no procedure to collect the forms and direct them to the proper

destination. A procedure should be developed to direct monitoring forms to the proper location. (NUREG-0654, J.12)

**Corrective Action Demonstrated:** This issue has been administratively closed. Centerville Jr. High School is no longer used for Lancaster County Monitoring/Decontamination.

f. **PRIOR ARCAs – UNRESOLVED:** None

**2.3.3 Emergency Worker Monitoring/Decontamination Station (Marietta Fire Company)**

a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 3.b.1 6.b.1

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** None

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

**2.3.4 Conoy Township Emergency Operations Center**

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

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** One (3.a.1)

**Issue Number: 64-09-3.a.1-A-03**

**Condition:** The backup route alerting team members were receiving a radiological brief and being issued dosimetry when the notification of a failed siren was received at the Conoy Emergency Operations Center, delaying the start of their runs for 15 minutes.

**Possible Cause:** The backup route alerting team did not receive briefing and dosimetry immediately upon reporting for duty.

**References:** NUREG-0654, E.6; Appendix 3, Section B.2(c)

**Effect:** Members of the general public located where the siren failed may not have received prompt notification of an emergency.

**Recommendation:** Provide radiological briefings and issue dosimetry as soon as the route alerting team reports for duty and perform any other actions needed to prevent delay of the backup notification.

**Schedule of Corrective Actions:** Agreed. Procedures will be clarified and additional training will be provided to ensure unnecessary delays are prevented in the future.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

#### 2.3.4.1 Back-up Route Alerting (Conoy Township)

- a. **MET:** 1.d.1 3.a.1 5.a.3  
1.e.1 3.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.4 Lebanon County**

**2.4.1 Lebanon County Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1 5.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.4.2 Reception Center & Monitoring/Decontamination (Lebanon County Career & Tech Center)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 6.c.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.4.3 Mass Care Center (Northern Lebanon High School)**

- a. **MET:** 1.b.1 3.a.1 6.c.1  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.4.4 Emergency Worker Monitoring/Decontamination Station (Annville Union Hose Fire Company)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 3.b.1 6.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.4.5 South Londonderry Township Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** Two

**Issue Number: 64-07-3.b.1-A-05**

**Condition:** The Back-Up Route Alerting team was not notified to take Potassium Iodide (KI).

**Corrective Action Demonstrated:** The South Londonderry Township Emergency Operations Center

(EOC) effectively demonstrated their ability to ensure that emergency workers are notified of all required actions regarding KI.

**Issue Number: 64-07-5.a.3-A-06**

**Condition:** The route for Lawn Fire Department – First Truck Back-Up Route Alerting was not completed in 45 minutes or less.

**Corrective Action Demonstrated:** During the exercise on April 14, 2009, the Back-Up Route Alerting was completed in less than 45 minutes.

f. **PRIOR ARCAs – UNRESOLVED:** None

**2.4.4.1 Back-up Route Alerting (South Londonderry Township)**

a. **MET:** 1.d.1 3.a.1 5.a.3  
1.e.1 3.b.1

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** None

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5 York County**

**2.5.1 York County Emergency Operations Center**

a. **MET:** (Not Evaluated)

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** None

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5.2 Emergency Worker Monitoring/Decontamination Station (Springetts Fire Company #16)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 6.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5.3 Fairview Township Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5.4 Goldsboro Borough Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. **DEFICIENCY:** None

- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5.5 Hellam Township Emergency Operations Center**

- a. **MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
           1.c.1 2.c.1 3.b.1  
           1.d.1 3.c.1  
           1.e.1 3.c.2  
                   3.d.1  
                   3.d.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5.5.1 Back-up Route Alerting (Hellam Township)**

- a. **MET:** 1.d.1 3.a.1 5.a.3  
           1.e.1 3.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**2.5.6 York Haven Borough Emergency Operations Center**

- a. MET:** 1.a.1 2.a.1 3.a.1 5.a.1  
1.c.1 2.c.1 3.b.1  
1.d.1 3.c.1  
1.e.1 3.c.2  
3.d.1  
3.d.2
- b. DEFICIENCY:** None
- c. AREAS REQUIRING CORRECTIVE ACTION:** None
- d. NOT DEMONSTRATED:** None
- e. PRIOR ARCAs – RESOLVED:** None
- f. PRIOR ARCAs – UNRESOLVED:** None

### **3.0 SUPPORT COUNTIES**

#### **3.1 Adams County**

##### **3.1.1 Adams County Emergency Operations Center**

- a. MET: 1.a.1 5.b.1  
1.c.1  
1.d.1  
1.e.1**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

##### **3.1.2 Monitoring/Decontamination Center (Gettysburg High School)**

- a. MET: 1.b.1 3.a.1 6.c.1  
1.e.1**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

##### **3.1.3 Reception & Mass Care Center (Gettysburg High School)**

- a. MET: 1.b.1 3.a.1 6.a.1  
1.e.1 6.b.1**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**

- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**3.2 Franklin County**

**3.2.1 Franklin County Emergency Operations Center**

- a. **MET:** 1.a.1 5.b.1  
1.c.1  
1.d.1  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**3.2.2 Reception Center, Monitoring/Decontamination & Mass Care Center (Scotland School)**

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 6.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

### 3.3 Schuylkill County

#### 3.1.1 Schuylkill County Emergency Operations Center

- a. **MET:** 1.a.1 5.b.1 6.a.1  
1.c.1  
1.d.1  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

#### 3.3.2 Reception Center (Blue Mountain High School)

- a. **MET:** 1.b.1 3.a.1 6.c.1  
1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

#### 3.3.3 Reception Center, Monitoring/Decontamination & Mass Care Center (Schuylkill Haven High School)

- a. **MET:** 1.b.1 3.a.1 6.a.1  
1.e.1 6.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

## **4.0 SCHOOL DISTRICTS**

### **4.1 Dauphin County School Districts**

#### **4.1.1 Central Dauphin School District (Chambers Hill Elementary School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

#### **4.1.2 Central Dauphin School District (Rutherford Elementary School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

#### **4.1.3 Central Dauphin School District (Central Dauphin East Middle School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

**4.1.4 Derry Township School District (Hershey High School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

**4.1.5 Derry Township School District (Hershey Primary Elementary School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

**4.1.6 Harrisburg School District (Foosse School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

**4.1.7 Harrisburg School District (Melrose School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.8 Harrisburg School District (Roland School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.9 Lower Dauphin School District (Londonderry Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.10 Lower Dauphin School District (Lower Dauphin Middle School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.11 Middletown Area School District (Middletown Fink Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.12 Middletown Area School District (Middletown Middle School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.13 Middletown Area School District (Reid Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.14 Milton Hershey School District (Milton Hershey School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.1.15 Steelton-Highspire School District (Steelton-Highspire Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.2 Lancaster County School Districts**

**4.2.1 Donegal School District (Riverview Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.2.2 Donegal School District (Donegal Kindergarten)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.2.3 Elizabethtown Area School District (Elizabethtown High School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.2.3 Elizabethtown Area School District (Rheems Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.3 Lebanon County School Districts**

**4.3.1 Palmyra Area School District (Pine Street Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4 York County School Districts**

**4.4.1 Central York School District (Sinking Springs Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.2 Dover Area School District (Dover High School)**

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**4.4.3 Dover Area School District (Dover Elementary School)**

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**4.4.4 Eastern School District (Eastern High School)**

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ARCAs – RESOLVED:** None
- f. **PRIOR ARCAs – UNRESOLVED:** None

**4.4.5 Northeastern School District (Orendorf Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.6 Northeastern School District (Shallow Brook Intermediate)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.7 Northeastern School District (Northeastern High School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.8 West Shore School District (Red Land High School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.9 West Shore School District (Fishing Creek Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.10 West Shore School District (Mount Zion Elementary School)**

- a. **MET: 3.c.2**
- b. **DEFICIENCY: None**
- c. **AREAS REQUIRING CORRECTIVE ACTION: None**
- d. **NOT DEMONSTRATED: None**
- e. **PRIOR ARCAs – RESOLVED: None**
- f. **PRIOR ARCAs – UNRESOLVED: None**

**4.4.11 West Shore School District (Newberry Elementary School)**

- a. MET: 3.c.2**
- b. DEFICIENCY: None**
- c. AREAS REQUIRING CORRECTIVE ACTION: None**
- d. NOT DEMONSTRATED: None**
- e. PRIOR ARCAs – RESOLVED: None**
- f. PRIOR ARCAs – UNRESOLVED: None**

# APPENDIX 1:

## Acronyms and Abbreviations

A&N	Alert and Notification
ACP	Access Control Point
ARC	American Red Cross
ARC 3031	American Red Cross document <i>Mass Care – Preparedness and Operations</i>
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Service
ATL	Assistant Team Leader
BRP	Bureau of Radiation Protection
CFR	Code of Federal Regulations
cpm	Counts per minute
DEP	Department of Environmental Protection
DHS	Department of Homeland Security
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPZ	Emergency Planning Zone
ES	Elementary School
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FR	Federal Register
FRERP	Federal Radiological Emergency Response Plan
HS	High School
ICF	ICF International
IPZ	Ingestion Pathway Emergency Planning Zone
JIC	Joint Information Center
KI	Potassium Iodide
mR/h	Milliroentgen(s) Per Hour

MS	Middle School
MS-1	Medical Services Drill
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	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
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guidance
PAR	Protective Action Recommendation
PEMA	Pennsylvania Emergency Management Agency
PRD	Permanent Record Dosimeter
R	Roentgen(s)
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
Rem	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
R/hr	Roentgens per hour
SAE	Site Area Emergency
SD	School District
SEOC	State Emergency Operations Center
TCP	Traffic Control Point
TL	Team Leader
TMI	Three Mile Island Generating Station
TTL	Technical Team Lead
TWP	Township

## APPENDIX 2: Exercise Evaluators and Team Leaders

The following is a list of the personnel who evaluated the Three Mile Island (TMI) exercise on April 14, 2009 and Out-of-Sequence activities on April 14 and 15, 2009. Evaluator Team Leaders (TL), Assistant Team Leaders (ATL), and Technical Team Leaders (TTL) are indicated by the letters after their organization's name. The organization each evaluator represents is indicated by the following abbreviations:

DHS/FEMA	Department of Homeland Security/Federal Emergency Management Agency
NRC	U.S. Nuclear Regulatory Commission
FAA	Federal Aviation Administration
ICF	ICF International

OBSERVERS-AT-LARGE	EVALUATOR	ORGANIZATION
DHS/FEMA Region III, Chairperson Regional Assistance Committee	Darrell Hammons	FEMA
Project Officer	John Price	FEMA
ICF Regional Coordinator	Roger Kowieski	ICF

### 1. BIENNIAL PLUME EXERCISE – April 14, 2009

COMMONWEALTH OF PENNSYLVANIA		
EVALUATION SITE	EVALUATOR	ORGANIZATION
State Emergency Operations Center	Richard Kinard Bud Iannazzo Dave Petta Tina Lai	FEMA-TL ICF-ATL ICF FEMA
Commonwealth Media Operations Center (MOC) – Harrisburg	Glenn Kinnear	ICF
Exelon Joint Information Center (JIC)	P. J. Nied	ICF
Accident Assessment Center (State EOC/BRP)	Reggie Rodgers	ICF-TTL
Mobile Vehicle (BRP)	Marynette Herndon	ICF
State Field Air Monitoring Team A	Richard Grundstrom	ICF
State Field Air Monitoring Team B	Nicholas DePierro	ICF

**1. BIENNIAL PLUME EXERCISE – April 14, 2009 (Cont.)**

<b>RISK JURISDICTIONS</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
<b>Cumberland County</b>		
Cumberland County EOC	Joseph Suders Rosemary Samsel Richard Wessman Roger Jobe	FEMA-TL ICF-ATL ICF ICF
Lower Allen Twp. EOC	Ernest Boaze	ICF
Back-up Route Alerting - Lower Allen Twp.	Richard Smith	ICF
<b>Dauphin County</b>		
Dauphin County EOC	Roy Smith Andrew Hower Carl McCoy Nick Lowe	ICF-TL FEMA-ATL ICF ICF
Conewago Twp. EOC	Frank Cordaro	ICF
Hummelstown Boro. EOC	Alexis Gearing	ICF
Middletown / Royaltown Boros. EOC	Mark Dalton	ICF
Back-up route Alerting - Middletown Boro.	Harold Spedding	ICF
<b>Lancaster County</b>		
Lancaster County EOC	Bart Freeman Albert Lookabaugh Nancy Johnson Wayne Wylie	FEMA-TL ICF-ATL ICF FEMA
Conoy Twp. EOC	John Flynn	ICF
Back-up Route Alerting - Conoy Twp.	Robert Black	ICF

**1. BIENNIAL PLUME EXERCISE – April 14, 2009 (Cont.)**

<b>RISK JURISDICTIONS (Cont.)</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
<b>Lebanon County</b>		
Lebanon County EOC	Chris Thompson Robert Rospenda Richard McPeak Michael Petullo	FAA-TL ICF-ATL ICF ICF
South Londonderry Twp. EOC	Denny Wilford	ICF
Back-up Route Alerting - South Londonderry Twp.	Don Calsyn	ICF
<b>York County</b>		
York County EOC NOT BEING DEMONSTRATED	Henry Christiansen	ICF-TL
Fairview Twp. EOC	Robert Host	ICF
Goldsboro Boro. EOC	Thomas Hegele	ICF
Hellam Twp. EOC	William O'Brien	ICF
Back-up Route Alerting - Hellam Twp.	Robert Duggleby	ICF
York Haven Boro. EOC	Keith Earnshaw	ICF

<b>SUPPORT JURISDICTIONS</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
<b>Adams County</b>		
Adams County EOC	Jon Christiansen	ICF-TL
<b>Franklin County</b>		
Franklin County EOC	Clayton Spangenberg	ICF
<b>Schuylkill County</b>		
Schuylkill County EOC	Michael Shuler	FEMA

## 2. OUT-OF-SEQUENCE DEMONSTRATIONS – April 14, 2009

SCHOOLS – 4/14/2009 (9:00 - 11:00 AM)		
ALL SCHOOLS - James McClanahan –TL		
EVALUATION SITE	EVALUATOR	ORGANIZATION
<b>Dauphin County</b>		
Central Dauphin School District - Chambers Hill ES	Larry Visniesky Both	ICF
Central Dauphin School District - Rutherford ES	Ron Biernacki School Only	ICF
Central Dauphin School District - Central Dauphin East MS	Steve Denson School Only	ICF
Derry Township School District - Hershey HS	Nancy Johnson Both	ICF
Derry Township School District - Hershey Primary ES	Deborah Blunt School Only	ICF
Harrisburg School District - Foose School	Tracy Green Both	ICF
Harrisburg School District - Melrose School	George MacDonald School Only	ICF
Harrisburg School District - Roland School	Bruce Swiren School Only	ICF
Lower Dauphin School District - Londonderry ES	Pat Taylor Both	ICF
Lower Dauphin School District - Lower Dauphin MS	Richard Smith School Only	ICF
Middletown Area School District - Middletown Fink ES	Don Calsyn School Only	ICF
Middletown Area S.D. - Middletown MS	James Grover School Only	ICF
Middletown Area School District - Reid ES	Wendy Swygert Both	ICF
Milton Hershey School District - Milton Hershey School	James McClanahan Both	ICF-TL
Steelton-Highspire School District - Steelton-Highspire ES	Michael Meshenberg Both	ICF

**2. OUT-OF-SEQUENCE DEMONSTRATIONS – April 14, 2009 (Cont.)**

<b>SCHOOLS – 4/14/2009 (9:00 - 11:00 AM) (Cont.)</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
<b>Lancaster County</b>		
Donegal School District - Riverview ES	Ronald Bonner School Only	ICF
Donegal School District - Donegal Kindergarten	Paul Cormier Both	ICF
Elizabethtown Area School District - Elizabethtown HS	Robert Black Both	ICF
Elizabethtown Area School District - Rheems ES	Roger Jobe School Only	ICF
<b>Lebanon County</b>		
Palmyra Area School District - Pine Street ES	Bernis Hannah Both	ICF
<b>York County</b>		
Central York School District - Sinking Springs ES	Gary Goldberg Both	ICF
Dover School District - Dover Area HS	Earl Shollenberger School Only	ICF
Dover School District - Dover ES	Robert Duggleby Both	ICF
Eastern School District - Eastern HS	Nick Lowe Both	ICF
Northeastern School District - Orendorf ES	Michael Petullo Both	ICF
Northeastern School District - Shallow Brook Intermediate	Michael Burriss School Only	ICF
Northeastern School District - Northeastern HS	Onalee Grady-Erickson School Only	ICF
West Shore School District - Red Land HS	Ken Tosch School Only	ICF
West Shore School District - Fishing Creek ES	Robert Vork Both	ICF
West Shore School District - Mount Zion ES	Carl Wentzell School Only	ICF
West Shore School District - Newberry ES	William Palmer School Only	ICF

**3. OUT-OF-SEQUENCE DEMONSTRATIONS – April 14, 2009**

<b>OUT-OF-SEQUENCE –State TCP – 4/15/2009 (10:00 – 12:00 Noon)</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
State Traffic/Access Control Points Harrisburg Barracks 8000 Bretz Drive Harrisburg, PA 17112	Harold Spedding	ICF

<b>OUT-OF-SEQUENCE - Reception Centers/Mass Care Centers/Emergency Worker Monitoring/Decontamination Stations – 4/15/2009 (7:00 – 9:30 PM)</b>		
<b>RISK JURISDICTIONS</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
<b>Cumberland County</b>		
Reception Center/Mont./Decon. & Mass Care Center - Shippensburg Univ.	Steve Denson	ICF
EW Mon./Decon. Station - West Shore Fire Station #2, Lemoyne	Deborah Blunt	ICF
<b>Dauphin County</b>		
Reception Center/ Mon./Decon. - Williams Valley HS	Ron Biernacki	ICF
Mass Care Center - Millersburg MS/HS	Wendy Swygert	ICF
Mass Care Center - Upper Dauphin HS	Bruce Swiren	ICF
<b>Lancaster County</b>		
Monitoring/Decontamination & Mass Care Center - Hempfield HS	Ronald Bonner	ICF
Emergency Worker Monitoring/ Decontamination Station - Marietta Fire Company	Paul Cormier	ICF

**3. OUT-OF-SEQUENCE DEMONSTRATIONS – April 15, 2009 (Cont.)**

<b>Lebanon County</b>		
Reception Center/Mon./Decon. - Lebanon County Career & Tech Center	Bernis Hannah	ICF
Mass Care Center - Northern Lebanon HS	Larry Visniesky	ICF
EW Mon./Decon. Station - Annville Union Hose Fire Company	Earl Shollenberger	ICF
<b>York County</b>		
EW. Monitoring/Decontamination Station - Springetts Fire Company #16	Gary Goldberg	ICF

<b>OUT-OF-SEQUENCE - Reception Centers/Mass Care Centers/Emergency Worker Monitoring/Decontamination Stations – 4/15/2009 (7:00 – 9:30 PM) (Cont.)</b>		
<b>EVALUATION SITE</b>	<b>EVALUATOR</b>	<b>ORGANIZATION</b>
<b>Adams County</b>		
Reception Center/Mass Care Center - Gettysburg HS	Dave Kayen	ICF
Monitoring/Decontamination Center - Gettysburg HS	Tracey Green	ICF
<b>Franklin County</b>		
Reception Center/Mass Care Center/ Monitoring/Decontamination Center - - Scotland School	George MacDonald	ICF
<b>Schuylkill County</b>		
Reception Center - Blue Mountain HS	Michael Meshenberg	ICF
Reception Center/Mass Care Center/ Monitoring/Decontamination Center - Schuylkill Haven School	Pat Taylor	ICF

## **APPENDIX 3:**

# **Exercise Evaluation Area Criteria and Extent of Play Agreement**

This appendix contains the extent of play agreement from the Commonwealth of Pennsylvania approved by the Federal Emergency Management Agency (FEMA) Region III on March 4, 2009.

The exercise evaluation area criteria, contained in the “FEMA Radiological Emergency Preparedness Exercise Evaluation Methodology”, 67 FR 20580, April 25, 2002, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, “Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980.

Because the exercise evaluation area criteria are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent of play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of the evaluation area criteria.

**THREE MILE ISLAND GENERATING STATION**  
**2009 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE**

**METHOD OF OPERATION**

April 9, 2009

**1. Three Mile Island Generating Station (TMI)**

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

**2. Bureau of Radiation Protection (BRP)**

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

Plume Exercise – State EOC, EOF  
Field Sampling Teams

BRP personnel will be evaluated as participants with the exception of the EOF

**3. PEMA Operations at State EOC/PEMA Headquarters**

This “Method of Operation” Document includes activities for the Full-Scale Plume Exercise (April 14, 2009), and the “Out of Sequence” Activities (April 15, 2009).

**A. Plume Exercise – April 14, 2009**

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

**B. Plume Exercise – “Out of Sequence” Activities – April 14, 2009.**

PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel will disseminate exercise related messages to the participating Counties for dissemination to the participating School Districts during the morning of April 14, 2009. The State Emergency Operations Center (EOC) and County EOCs will NOT

be evaluated during the “Out of Sequence” component. PEMA personnel will serve as “observers” at the identified School Districts.

**C. “Out of Sequence” Activities – April 15, 2009.**

PEMA personnel will serve as “Observers” at the various field exercise locations during the evening “Out-of-Sequence” component April 15, 2009. An exercise coordinator will remain in the State EOC. The State Emergency Operations Center (EOC) and Counties will NOT be evaluated during the evening “Out of Sequence” component.

**4. PEMA Area Office Operations**

The PEMA Area Offices (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 as assigned. Liaison Officers are exercise participants.

**5. Counties Designated to Participate**

**A. Plume Phase Exercise (April 14, 2009):**

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 Emergency Operations Centers and implement emergency response operations to include 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.

**6. PEMA Liaison Officers**

Liaison officers will be present at the participating risk/support county EOCs, the TMI Emergency Operations Facility (EOF) and the TMI Joint Information Center (JIC) to provide assistance, guidance, and support. These liaison officers will participate as players in the plume phase exercise on April 14, 2009.

**7. Controllers**

Controllers will be present at the emergency worker monitoring/decontaminating stations and the mass care monitoring/ decontamination centers (April 15, 2009). Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate, regarding radiological readings during the monitoring of personnel. Live radioactive sources will not be used. ***Exception:** individuals tasked with the setup of portal monitoring equipment will use a standard 1 micro curie Cesium 137 source for the purpose*

*of conducting operational tests. Additionally, appropriate test sources will be available and used to verify the operation of the monitoring / survey instruments per manufacturers recommendations.*

## **8. PEMA Observers**

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

## **9. Department of Homeland Security (DHS) Evaluators**

### **A. Plume Exercise:**

**Out of Sequence Period (April 14, 2009):** Federal evaluators will be present at the identified “out-of-sequence” demonstration sites per Attachment A, Section I.1 These include the identified Public School Districts.

**Plume Phase Exercise (April 14, 2009):** Federal evaluators will be present at the SEOC and identified risk and support county EOCs to evaluate player response to the actual and simulated events in the exercise scenario. Additionally, one-third of the risk municipalities will be federally evaluated.

**Out of Sequence Period (April 15, 2009):** Federal evaluators will be present at identified Reception Centers, Emergency Worker Monitoring and Decontamination Stations, Mass Care Shelters, and Monitoring and Decontamination Centers, as identified in Attachment A, Section I.B.1, I.B.2 and I.B.3.

## **10. Demonstration Windows**

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

The “demonstration windows” for this exercise are:

### **A. Plume Phase Exercise**

The out-of-sequence MS-1 hospital demonstration was federally evaluated at Gettysburg Hospital, Adams County, August 29, 2007.

The out-of-sequence exercise window for school demonstrations will be from 9:00 until completed on April 14, 2009.

The out-of-sequence demonstration of reception centers, mass care centers, monitoring/decontamination centers, and emergency worker stations will be conducted from 7:00 - 9:30 p.m. on April 15, 2009. Locations are specified within Attachment A, Section II.

The out-of-sequence interview of Pennsylvania State Police traffic control/access control points will be from 10:00 a.m. - 12:00 noon on April 15, 2009.

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

County and municipal EOC operations will be conducted on April 14, 2009. (Please refer to the Extent of Play Demonstration Tables, Attachment A)

## **B. Post Plume Exercise**

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

## **11. Stand-down**

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

- a. Upon completion of all requirements and confirming with the DHS/CNPPD 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”.
- b. Support counties may likewise request approval from the State EOC to terminate the exercise upon completion of all evaluated objectives.
- c. The risk county EOCs will remain operational until the exercise is officially terminated by the State. **The State EOC will issue an Exercise Termination Message.**

## **12. General Concepts**

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

public health and safety, it should be noted so that the plan can be modified and the appropriate negative assessment applied.

### **13. Re-demonstrations**

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

**THREE MILE ISLAND NUCLEAR GENERATING STATION**  
**2009 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE**

**EXTENT OF PLAY AGREEMENT**

**EVALUATION AREA 1**

**Emergency Operations Management**

**Sub-element 1.a – Mobilization**

**INTENT**

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

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

**EXTENT OF PLAY**

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

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

***PEMA Negotiated Extent of Play:***

*Pre-positioning of state emergency personnel (Liaison Officers) at the Emergency Operations Facility (EOF), the Joint Information Center (JIC) and risk and support counties is appropriate due to the commuting distance from the individual's duty location or residence. Risk municipalities will conduct call-outs to demonstrate the mobilization of key personnel.*

- *Actual calls (or pager notifications) will be made to the municipal EOC personnel for the plume phase exercise, April 14, 2009, per plans and procedures.*

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

### **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, H.3)**

#### **EXTENT OF PLAY**

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

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

*PEMA Negotiated Extent of Play:* None

### **Sub-element 1.c - Direction and Control**

#### **INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) 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, A.1.d; A.2.a, b)**

## EXTENT OF PLAY

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

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

*PEMA Negotiated Extent of Play:* None

### Sub-element 1.d – Communications Equipment

## INTENT

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

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

## EXTENT OF PLAY

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

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

***PEMA Negotiated Extent of Play:***

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

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

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

**INTENT**

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

**Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations. (NUREG-0654, H.7, 10; J.10.a, b, e; J.11; K.3.a)**

**EXTENT OF PLAY**

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

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV-700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument, or the calibration frequency may be verified by other means. Additionally, instruments being used to measure activity should have a range of reading sticker affixed to the side of the instrument. The above considerations should be included in 4.a.1 for field team equipment; 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment; reception center and emergency worker facilities' equipment under 6.a.1; and ambulance and medical facilities' equipment under 6.d.1.

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

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

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

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

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

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

***PEMA Negotiated Extent of Play:***

*In Pennsylvania CDV-700s are calibrated every 4-years. Support counties do not have DRDs, or KI, but those responsible for reception centers and / or monitoring and decontamination centers will have PRDs.*

*Evaluation of KI quantities will be verified using inventory sheets. KI will not be removed from storage locations and boxes / packages will not be opened. KI questions will be addressed through interviews.*

*Leakage testing verification and KI extension letters will be available to the evaluator.*

## EVALUATION AREA 2

### Protective Action Decision-Making

#### Sub-element 2.a - Emergency Worker Exposure Control

##### INTENT

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place, as specified in the ORO's plans and procedures, to authorize emergency worker exposure limits to be exceeded for specific missions.

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

**Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4; J.10.e, f)**

##### EXTENT OF PLAY

ORO's authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures. Responsible ORO's should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels. As appropriate, ORO's should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established Protective Action Guides (PAGs) for KI administration.

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

*PEMA Negotiated Extent Of Play:* None

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

**INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to use all available data to independently project integrated dose and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (for example, other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

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

**EXTENT OF PLAY**

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

When the licensee provides release and meteorological data, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

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

*PEMA Negotiated Extent of Play:* None.

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

## **EXTENT OF PLAY**

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

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

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

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

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

*PEMA Negotiated Extent of Play:* None

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

### **INTENT**

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

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

### **EXTENT OF PLAY**

Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are weather conditions, shelter availability, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts of emergency conditions that are expected to or may necessitate protective actions for students. Contacts with public school systems/districts must be actual.

In accordance with plans and/or procedures, OROs and/or officials of public school systems/districts should demonstrate the capability to make prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (that is, either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (for example, whether the students are still at home, en route to the school, or at the school).

**All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.**

*PEMA Negotiated Extent of Play:* None

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

**INTENT**

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

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

***PEMA Negotiated Extent of Play:***

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

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

Relocation: OROs should demonstrate the capability to estimate integrated dose in contaminated areas and to compare these estimates with PAGs, apply decision criteria for relocation of those individuals in the general public who have not been evacuated but where projected doses are in excess of relocation PAGs, and control access to evacuated and restricted areas. Decisions are made for relocating members of the evacuated public who lived in areas that now have residual radiation levels in excess of the PAGs.

Determination of areas to be restricted should be based on factors such as the mix of radio nuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.

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

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

Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should

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

Return: Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG.

Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the Emergency Classification Level and the relaxation of associated restrictive measures; basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and to identify the procedures and resources for their restoration. Examples of these services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

***PEMA Negotiated Extent Of Play:***

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

**EVALUATION AREA 3  
Protective Action Implementation**

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

**INTENT**

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

**Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plans and procedures. Emergency workers periodically and at the end of each mission**

**read their dosimeters and record the readings on the appropriate exposure record or chart. (NUREG-0654, K.3.a, b)**

## **EXTENT OF PLAY**

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

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

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

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, for example, at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

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

***PEMA Negotiated Extent of Play:***

*Radiological briefings (either verbal or video) will be provided to address exposure limits and procedures to replace those approaching limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI will be simulated. The completion of a “Dosimetry-KI Report Form” will be demonstrated.*

*OROs should also demonstrate the use of all applicable dosimetry forms.*

*At any time, players may ask other players or supervisors to clarify radiological information.*

*In Pennsylvania, emergency workers outside of the EPZ do not have turn back values.*

*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 dosimeters strategically placed in the work area. In Pennsylvania this will be accomplished through the use of an area kit. The area kit process is explained in state, county and municipal plans.*

*Standard issue of dosimetry and potassium iodide for each category of emergency worker is as follows:*

*Category A: 1 PRD, 1 DRD, and 1 unit of KI*

*Category B: 1 PRD and 1 unit of KI*

*Category C: 1 PRD*

*All locations that have dosimetry equipment indicated within their Radiological Emergency Response Plan (RERP), will make the dosimetry equipment (and KI) available for inspection by the federal evaluator. Simulation PRDs with mock serial numbers will be used.*

***Sub-element 3.b – Implementation of KI Decision***

**INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide radio protective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option and is reflected in ORO’s plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radio protective drugs.

**Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration**

**of KI for emergency workers and institutionalized individuals is maintained.  
(NUREG-0654, J.10.e)**

## **EXTENT OF PLAY**

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

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

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

### ***PEMA Negotiated Extent of Play:***

*Within Pennsylvania, the Pennsylvania Department of Health is responsible for distribution of KI to the general public located within the EPZ. Pre-distribution is accomplished on an annual basis. KI is not distributed to the general public at the time of an emergency.*

*Evaluation of emergency worker KI quantities will be verified using inventory sheets. KI will not be removed from storage locations and boxes will not be opened. KI questions will be addressed through interviews.*

*Personnel assigned to operate Monitoring/Decontamination Centers and Stations are not issued DRDs or KI since the centers/stations are located outside the EPZ. Each will be issued a simulated PRD with mock serial numbers.*

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

#### **INTENT**

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

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

#### **EXTENT OF PLAY**

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

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

**All implementing activities associated with protective actions for special populations must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.**

#### ***PEMA Negotiated Extent of Play:***

*The names, locations and contact information of identified individuals with identified special needs are maintained on a list at their respective municipal EOC (based upon residential jurisdiction). Copies of these lists will not be provided to the evaluators; however, evaluators will be allowed to inspect the lists during the exercise.*

*Initial contact, by the county, with special populations (hospitals, nursing homes and county correctional facilities) will be actual. All subsequent calls will be simulated. Actual contacts (up to two per risk county) will be made with transportation providers per their plan. All actual and simulated contacts should be logged.*

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

**EXTENT OF PLAY**

Public school systems/districts shall demonstrate the ability to implement protective action decisions for students. The demonstration shall be made as follows: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver (and the bus driver's escort, if applicable) should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

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

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

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

***PEMA Negotiated Extent of Play:***

*School students will not be involved during the exercise. Actions and activities associated with the demonstration of Criterion 3.c.2 will be limited to the school district administration key personnel and the county. Evacuation of students will be conducted through an interview process with school district personnel or the building principal.*

*The role of the bus driver may be conducted through an interview with school or transportation officials (or designee) if a bus driver is not available. Actual demonstration of the bus route is not required and will not be demonstrated. Maps or route descriptions will be available for illustration purposes.*

*Risk county school plans do not require communications between the school and vehicles. Bus drivers are not considered emergency workers and therefore do not require dosimetry.*

*Private schools, private kindergartens, and day care centers do not participate in REP exercises. However, OROs will be prepared to show evaluators lists of these facilities that they will contact in the event of an emergency in accordance with plans and procedures. Any simulated contacts should be logged.*

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

#### **INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement protective action plans, including relocation and restriction of access to evacuated/sheltered areas. This sub-element focuses on selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

**Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654, J.10.g, j)**

#### **EXTENT OF PLAY**

ORO should demonstrate the capability to select, establish, and staff appropriate traffic and access control points, consistent with protective action decisions (for example, evacuating, sheltering, and relocation), in a timely manner. OROs should demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.

Traffic and access control staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview, in accordance with the extent of play.

In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access.

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

#### ***PEMA Negotiated Extent of Play:***

*Municipal traffic and access control will be demonstrated by interview at the applicable EOC of jurisdiction. The traffic/access control personnel will not be deployed to the traffic/access control point(s). If the designated assignment is a location within the EPZ, a radiological briefing will be provided to the assigned individuals.*

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

**EXTENT OF PLAY**

OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, should be logged.

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

***PEMA Negotiated Extent Of Play:***

*ORO's should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as tow trucks, need not be demonstrated; however, simulated contacts will be logged.*

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

**INTENT**

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

**Criterion 3.e.1: The ORO demonstrates the availability and appropriate use of adequate information regarding water, food supplies, milk, and agricultural production within the ingestion exposure pathway emergency planning zone for implementation of protective actions. NUREG-0654, J.9, 11)**

**EXTENT OF PLAY**

Applicable ORO's should demonstrate the capability to secure and utilize current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the ingestion pathway EPZ. ORO's should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criteria will take into consideration the level of Federal and other resources participating in the exercise.

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

*PEMA Negotiated Extent Of Play:*

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

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

**EXTENT OF PLAY**

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

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

*PEMA Negotiated Extent Of Play:*

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

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

**INTENT**

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

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

**EXTENT OF PLAY**

Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs. Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. OROs should also demonstrate the capability to communicate instructions to the public regarding relocation decisions. ORO's should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the (first -, second -, and fifty-year) PAG's.

Re-entry: OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily re-enter the restricted area, to protect them from unnecessary radiation exposure and for exit of vehicles and other equipment to control the spread of contamination outside the restricted area. Monitoring and decontamination facilities will be established as appropriate.

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

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

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

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

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

***PEMA Negotiated Extent Of Play:***

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

**EVALUATION AREA 4  
Field Measurement and Analysis**

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

**INTENT**

This sub-element derives from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume. In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

**Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10; I.7, 8, 9)**

**EXTENT OF PLAY**

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

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

***PEMA Negotiated Extent of Play:***

*Department of Environmental Protection (DEP), Bureau of Radiation Protection (BRP) field teams are equipped with the necessary instrumentation and supplies. Evaluators will meet the field teams from the DEP South Central Regional Office at 1430 on April 14, 2009, to observe instrumentation checks and equipment inventory verification prior to deployment. After instrumentation checks field teams will meet R3V at DEP Lab for deployment and briefing information. High range instrumentation would be cross checked in the field with other instrumentation if the dose rate reaches that level.*

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

**EXTENT OF PLAY**

Responsible Offsite Response Organizations (ORO) should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment.

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

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

ORO's should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (for example, compacts, utility, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

***PEMA Negotiated Extent of Play:***

*Field team control will be performed within or near the 10 mile EPZ using the DEP Radiological Rapid Response Vehicle (R3V). The R3V will be located in the lower parking lot of the DEP Lab building located down the street from the State EOC on Interstate Drive in Harrisburg. Field team control is expected to initially be out of sequence with the plume timeline. During the exercise the field teams will be directed to take measurements in locations to provide information sufficient to characterize the plume and impacts. In addition to field team measurements, remote detectors will be located by the field teams near the expected plume pathway, these detectors will automatically transmit data to the R3V. These detectors will be used to keep field team dose ALARA. A FEMA Evaluator will be located at the R3V location, arriving at the same time as the R3V Staff Teams, expected to be at 1400 on April 14, 2009.*

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

**EXTENT OF PLAY**

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.

ORO's should use Federal resources as identified in the FRERP, and other resources (for example, compacts, utility, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.

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

***PEMA Negotiated Extent of Play:***

*Measurements will be made by 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 DEP South Central Regional Office will demonstrate ambient radiation monitoring and radioiodine and particulate sampling. Field teams will be equipped with appropriate dosimetry and KI. Both teams will be evaluated by FEMA. Each team will be directed to monitoring locations 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 first location that meets the requirements for taking an air sample ( $\geq 1$  mR/hr) or as directed. Teams will then take additional simulated air samples, as directed, at additional locations if conditions are appropriate for radioiodine sampling and relay information to the Radiological Rapid Response Vehicle (R3V). In place of silver zeolite cartridges, charcoal cartridges will be used for the exercise. All measurements will be forwarded to the R3V immediately upon obtaining data. Evaluators will meet the field teams at the South Central Regional Office) at 1430 pm on April 14, 2009.*

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

##### **INTENT**

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

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

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

##### **EXTENT OF PLAY**

The ORO's field team should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.

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

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

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

*PEMA Negotiated Extent of Play:*

This criterion will not be demonstrated during this exercise.

**Sub-element 4.c - Laboratory Operations**

**INTENT**

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should 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, C.3; J.11)**

**EXTENT OF PLAY**

The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, preventing buildup of background radiation due to stored samples, preventing cross contamination of samples, preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory (laboratories) instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g., transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

The laboratory staff should be qualified in radioanalytical techniques and contamination control procedures.

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

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

*PEMA Negotiated Extent of Play:*

This criterion will not be demonstrated during this exercise.

**EVALUATION AREA 5  
Emergency Notification and Public Information**

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

**INTENT**

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

**Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D and NUREG-0654, E.5, 6, 7)**

**EXTENT OF PLAY**

Responsible Offsite Response Organizations (ORO) should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.

Offsite Response Organizations (ORO) with route alerting as the primary method of alerting and notifying the public should demonstrate the capability to accomplish the primary route alerting, following the decision to activate the alert and notification system, in a timely manner (will not be subject to specific time requirements) in accordance with the ORO's plan and/or procedures. At least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated

at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location. The initial message should include the elements required by current FEMA REP guidance.

For exercise purposes, timely is defined as “the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay.” If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.

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

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

***PEMA Negotiated Extent of Play:***

*The Commonwealth of Pennsylvania has implemented a Statewide EAS Control system in cooperation with the Pennsylvania Association of Broadcasters per the State Emergency Communications Committee and Pennsylvania Emergency Alert System State EAS Plan (April 1, 2004). The State EOC (PEMA) is the initiating point for the activation of the EAS. Risk counties have the control equipment for activation of sirens. Coordination will occur between the State EOC and the affected counties with respect to the Alert and Notification System (ANS) process. Sirens will be coordinated and the sounding simulated at the appropriate time with the simulated activation of EAS taking place approximately 3 minutes following the simulated activation of the sirens. Regular broadcasting will not be interrupted on the EAS Stations. 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 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.*

*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 route alerting of the hearing impaired residents within their jurisdiction by interview at the EOC.*

**Criterion 5.a.2: [RESERVED]**

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

**EXTENT OF PLAY**

Offsite Response Organizations (ORO) with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5-10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.

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

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

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

***PEMA Negotiated Extent of Play:***

*Back-up alert notification of the public due to a simulated siren failure will be demonstrated. (Refer to Attachment A, Section I. 4.) County liaisons will give an inject to the county coordinator that a particular siren has failed in the municipalities scheduled to demonstrate back-up route alerting. This siren failure will then be communicated to the appropriate municipalities so they can demonstrate their 45-minute back-up route alert run. Pennsylvania does not have any “exception areas.”*

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

**INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to disseminate to the public appropriate emergency information and instructions, including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure 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 also provides that a system should be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

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

**EXTENT OF PLAY**

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner (will not be subject to specific time requirements). For exercise purposes, timely is defined as “the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay.” If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.

The ORO should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions (for example, evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. The ORO should also be prepared to disclose and explain the Emergency Classification Level (ECL) of the incident. At a minimum, this information must be included in media briefings and/or media releases. OROs should demonstrate the capability to use language that is clear and understandable to the public within

both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

The emergency information should be all-inclusive by including previously identified protective action areas that are still valid, as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

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

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

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

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

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

***PEMA Negotiated Extent of Play:***

*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. Any subsequent information/news statements required by the ORO plans will be made by the individual counties to ONE specific electronic news media/information outlet serving the county. 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 (10) public inquiry calls from the state exercise cell assigned this responsibility. Counties will be expected to receive and log the calls, identify any trends, and take appropriate actions.*

## **EVALUATION AREA 6**

### **Support Operation/Facilities**

#### **Sub-element 6.a – Monitoring and Decontamination of Evacuees and Emergency Workers and Registration of Evacuees**

#### **INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.

**Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h; J.12; K.5.a)**

#### **EXTENT OF PLAY**

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

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

hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (for example, partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

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

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

**All activities associated with this criterion must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.**

***PEMA Negotiated Extent of Play:***

*Radiological monitoring demonstration sites should possess a roster of the monitoring personnel required to process 20% of the population allocated to the facility within a 12 hour period.*

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

***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. Co-located facilities do not require strip maps or written directions.***

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

***At the Evacuee Monitoring/Decontamination Center**, a minimum of six (6) volunteer evacuees will be monitored (or one volunteer evacuee may be monitored six times). Suitable radiological monitoring instruments will be issued to and demonstrated by the initial monitoring team(s). A monitoring team consists of one monitor and one recorder equipped with one survey instrument. Those individuals found to be free of “contamination”, based upon scenario injects, will be directed to the mass care registration point for further processing. **Note:** Actual radiological sources will not be attached to or hidden upon the volunteer evacuees.*

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

***At the Emergency Worker Monitoring/Decontamination Stations**, one emergency worker will be monitored. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Showering will be simulated, water will not be used. Suitable radiological monitoring instruments will be issued to the initial monitoring team. **Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used.***

***Portal monitor Use:** Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated evacuees and/or emergency workers. The monitoring/decontamination team requirements will be based on the portal monitor capabilities as applicable based on the procedure/guidelines, and the recommendations of the manufacturer. **Note:** PEMA Circular C2004-2 shall apply.*

*Monitoring/decontamination centers and Emergency Worker monitoring and decontamination station personnel are not issued DRDs or KI since the centers and stations are outside the EPZ. Category “C” dosimetry applies. Simulated personal record dosimeters (PRDs) will be worn.*

*Radiation readings/contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off 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.*

## **Sub-element 6.b – Monitoring and Decontamination of Emergency Worker Equipment**

### **INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

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

### **EXTENT OF PLAY**

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

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

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

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

### ***PEMA Negotiated Extent of Play:***

*Emergency worker station personnel will consist of a minimum of one monitor and one recorder and sufficient personnel to demonstrate monitoring of at least one vehicle. Schematics of these monitoring/decontamination stations will be available to show organization and space management. The evaluator will request that vehicle decontamination procedures be explained after the vehicle (with simulated contamination) has been monitored. One radiological survey meter, will be issued to each vehicle monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package, and injected by a controller. Set-up of the facility*

*will be performed as closely as possible to that for an actual emergency with all route markings in place.*

*Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, will be simulated and conducted by interview. Water will NOT be used.*

### **Sub-element 6.c - Temporary Care of Evacuees**

#### **INTENT**

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) demonstrate the capability to establish relocation centers in host areas. The American Red Cross (ARC) 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. (Found in MASS CARE - Preparedness Operations, ARC 3031) Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate before entering congregate care facilities. (NUREG-0654, J.10.h; J.12)**

#### **EXTENT OF PLAY**

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

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

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

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

***PEMA Negotiated Extent of Play:***

*All counties demonstrating the operation of mass care centers during the out-of-sequence window will provide floor plans of the mass care centers to show organization within the facility and space management during a real emergency. Mass care center locations are listed in the demonstration tables “Demonstration of Mass Care Centers (Attachment A, Section B.3)”.*

*Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The responsible American Red Cross chapter will show the source and quantities, by job functional description, to be provided to mass care centers to support the 24-hour operation. The responsible Red Cross Chapter(s) will be visited, or telephonically contacted during business hours on April 15, 2009, by an exercise evaluator, or interviewed at the mass care center during the out-of-sequence evaluation to provide information regarding the 24-hour operation. Schematics of these mass care centers will be available, during the demonstration window, to show organization within the facility and space allocation for the registration and sheltering the evacuating public. Necessary signs, directional arrows and forms will be available and used to demonstrate registration, at a minimum, of three evacuees requiring emergency housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators. This out-of-sequence demonstration window will be from 7:00 PM – 9:30 PM on April 15, 2009.*

*American Red Cross risk and support county chapters:*

Lebanon County Chapter  
1220 Mifflin Street  
Lebanon, PA 17046  
Dawn Vitez (717) 273-2671

ARC of the Susquehanna Valley  
1804 N. Sixth Street, P.O. Box 5740  
Harrisburg, PA 17110  
Chris Weidenhammer (717) 234-3101

Cumberland County Chapter  
79 E. Pomfret Street  
Carlisle, PA 17013  
Sherrie Davis (717) 243-5211

Franklin County Chapter  
25 Penncraft Avenue  
Chambersburg, PA 17201  
Thomas Reardon (717) 264-6214

Schuylkill and Eastern Northumberland County Chapter  
1402 Laurel Boulevard  
Pottsville, PA  
Janet Curtis (570) 622-9550

York County Chapter  
724 South George Street  
York, PA 17403  
Robert Straw (717) 771-3560

Adams County Chapter  
(Combined with York County)

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

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO's) should 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, F.2; H.10; K.5, a, b; L.1,4)**

#### **EXTENT OF PLAY**

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

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

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

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

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

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

Frequency for Evaluation of New Criteria.

**Note: This sub-element was federally evaluated at Gettysburg Hospital (Adams County), August 29, 2007.**

**ATTACHMENT A**

**Three Mile Island Generating Station 2009  
Extent of Play Demonstration Tables**

**I. PLUME PHASE EXERCISE –**

**A. Activities – April 14, 2009**

- 1. Risk Public School Districts with schools located within the EPZ and those districts situated outside the EPZ, but with students living within the EPZ, will participate and be evaluated by 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 six-year exercise cycle.**

**Time: Out of Sequence – 9:00 – 11:00 AM**

<b>COUNTY</b>	<b>SCHOOL DISTRICT</b>	<b>SCHOOL</b>
<b>Dauphin</b>	Central Dauphin	1. Chambers Hill Elem 2. Rutherford Elem 3. Central Dauphin East MS
	Derry Township	1. Hershey HS 2. Hershey Primary Elem
	Harrisburg	1. Foose School 2. Melrose School 3. Rowland School
	Lower Dauphin	1. Londonderry Elem 2. Lower Dauphin MS
	Middletown Area	1. Fink Elem 2. Middletown MS 3. Reid Elem
	Milton Hershey	1. Milton Hershey
	Steelton-Highspire	1. Steelton-Highspire Elem
<b>Lancaster</b>	Donegal	1. Riverview Elem 2. Donegal Kindergarten
	Elizabethtown Area	1. Elizabethtown HS 2. Rheems Elem
<b>Lebanon</b>	Palmyra Area	1. Pine Street Elem

<b>COUNTY</b>	<b>SCHOOL DISTRICT</b>	<b>SCHOOL</b>
<b>York</b>	Central York	1. Sinking Springs Elem
	Northeastern	1. Orendorf Elem 2. Shallow Brook Intermediate 3. Northeastern HS
	Dover Area	1. Dover Area HS 2. Dover Elem
	Eastern	1. Eastern HS
	West Shore	1. Red Land HS 2. Fishing Creek Elem 3. Mount Zion Elem 4. Newberry Elem

**2. County Emergency Operations Centers (EOCs)**  
**Time: Per Scenario**

<b>DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES (Plume Phase Exercise)</b>		
<b>COUNTY</b>	<b>DATE</b>	<b>TIME</b>
Adams	April 14, 2009	Per Scenario
Cumberland	April 14, 2009	Per Scenario
Dauphin	April 14, 2009	Per Scenario
Franklin	April 14, 2009	Per Scenario
Lancaster	April 14, 2009	Per Scenario
Lebanon	April 14, 2009	Per Scenario
York	No demo	
Schuylkill	April 14, 2009	Per Scenario

**3. Municipal Emergency Operations Centers (EOC)  
Time: Per Scenario**

<b>DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES (Plume Phase Exercise)</b>		
<b>RISK COUNTY</b>	<b>MUNICIPALITY</b>	<b>DATE</b>
Cumberland	New Cumberland Borough	April 14, 2009
	Lower Allen Township	April 14, 2009
Dauphin	Conewago Township	April 14, 2009
	Derry Township	April 14, 2009
	Harrisburg City	April 14, 2009
	Highspire Borough	April 14, 2009
	Hummelstown Borough	April 14, 2009
	Londonderry Township	April 14, 2009
	Lower Paxton Township	April 14, 2009
	Lower Swatara Township	April 14, 2009
	*Middletown/Royalton Boroughs	April 14, 2009
	Paxtang Borough	April 14, 2009
	South Hanover Township	April 14, 2009
	Steelton Borough	April 14, 2009
	Swatara Township	April 14, 2009
Lancaster	Conoy Township	April 14, 2009
	East Donegal Township	April 14, 2009
	*Elizabethtown Borough/West Donegal Township/Mount Joy Township	April 14, 2009
Lebanon	South Londonderry Township	April 14, 2009
York	Conewago Township	April 14, 2009
	Dover Township	April 14, 2009
	Fairview Township	April 14, 2009
	Goldsboro Borough	April 14, 2009
	Hellam Township	April 14, 2009
	*Lewisberry Borough/Newberry Township	April 14, 2009
	Manchester Township	April 14, 2009
	*Northeast Area (Mt. Wolf/E. Manchester/ Manchester)	April 14, 2009
	Springettsbury Township	April 14, 2009
	Warrington Township	April 14, 2009
York Haven Borough	April 14, 2009	

\* Joint EOC

**4. One back-up one route alerting demonstration by one municipality in each risk county.  
(During Scenario Exercise)**

<b>Cumberland</b>	Lower Allen Township	April 14, 2009
<b>Dauphin</b>	Middletown Borough	April 14, 2009
<b>Lancaster</b>	Conoy Township	April 14, 2009
<b>Lebanon</b>	South Londonderry Township	April 14, 2009
<b>York</b>	Hellam Township	April 14, 2009

**5. Traffic and Access Control Points**

- a. The Pennsylvania State Police will brief at the PSP Harrisburg Barracks, 8000 Bretz Drive, Harrisburg, PA, 17112 Those attending the briefing will not actually deploy to the TCP/ACPs.
- b. The PSP briefing will be performed out of sequence in a demonstration window of **10:00 a.m. to 12:00 noon on April 15, 2009.**
- c. 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.
- d. Municipal and county staffs will be prepared to brief the DHS evaluator on actions to be taken should there be an impediment to evacuation on a designated route. This will be demonstrated between 7:00 pm - 9:30 pm on April 14, 2009.

<b>Municipal / Regional Police Forces</b>	
<b>Cumberland</b>	New Cumberland Borough Lower Allen Township
<b>Dauphin</b>	Lower Paxton Township Highspire Borough Harrisburg City Hummelstown Middletown/Royalton Paxtang Borough
<b>Lancaster</b>	Mount Joy Township Elizabethtown Borough/West Donegal Township Susquehanna Regional
<b>Lebanon</b>	South Londonderry Township
<b>York</b>	Fairview Township Hellam Township Newberry Township Northeastern Regional Northern York County Springettsbury Township

**B. April 15, 2009**

**1. Reception Centers (Out of Sequence)**

<b>DEMONSTRATION of Reception Centers</b>		
<b>COUNTY</b>	<b>DATE</b>	<b>Time</b>
<b>Adams</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Cumberland</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Dauphin</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Franklin</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Lancaster</b>	No demo	No demo
<b>Lebanon</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Schuylkill</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>York</b>	No demo	No demo

<b>COUNTY</b>	<b>Reception Center Location</b>
<b>Adams</b>	Gettysburg HS
<b>Cumberland</b>	Shippensburg University
<b>Dauphin</b>	Williams Valley HS
<b>Franklin</b>	Scotland School
<b>Lancaster</b>	No demo
<b>Lebanon</b>	Lebanon County Career and Tech Center
<b>Schuylkill</b>	Blue Mountain HS
<b>York</b>	No demo

**2. Monitoring/Decontamination Centers (Out of Sequence)**

<b>COUNTY</b>	<b>DEMONSTRATION of Mon/Decon Centers</b>	
	<b>DATE</b>	<b>Time</b>
<b>Adams</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Cumberland</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Dauphin</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Franklin</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Lancaster</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Lebanon</b>	April 15, 2009	7:00 p.m. – 9:30 p.m.
<b>Schuylkill</b>	April 15, 2009	7:00 p.m. – 9:30 p.m..
<b>York</b>	No demo	No demo

<b>COUNTY</b>	<b>Mon/Decon Center Locations</b>	<b>Quantity</b>
<b>Adams</b>	Gettysburg HS	1
<b>Cumberland</b>	Shippensburg University	1
<b>Dauphin</b>	Williams Valley HS	1
<b>Franklin</b>	Scotland School	1
<b>Lancaster</b>	Hempfield HS ***	1
<b>Lebanon</b>	Lebanon County Career and Tech Center	1
<b>Schuylkill</b>	Schuylkill Haven HS	1
<b>York</b>	No demo	

\*\*\* During this exercise Lancaster County will be developing and testing procedures at Hempfield High School for processing family pets through monitoring/decontamination centers and mass care centers. This exercise merely provides a vehicle for emergency responders to test these procedures. The actions concerning family pets will be totally separate from the TMI biennial exercise. Under no circumstances is it considered to be part of the evaluation.

### 3. Mass Care Centers (Out of Sequence)

COUNTY	DEMONSTRATION of Mass Care Centers	
	DATE	Time
Adams	April 15, 2009	7:00 p.m. – 9:30 p.m.
Cumberland	April 15, 2009	7:00 p.m. – 9:30 p.m.
Dauphin	April 15, 2009	7:00 p.m. – 9:30 p.m.
Franklin	April 15, 2009	7:00 p.m. – 9:30 p.m.
Lancaster	April 15, 2009	7:00 p.m. – 9:30 p.m.
Lebanon	April 15, 2009	7:00 p.m. – 9:30 p.m.
Schuylkill	April 15, 2009	7:00 p.m. – 9:30 p.m.
York	No Demo	

COUNTY	Mass Care Center Locations	Quantity
Adams	Gettysburg HS	1
Cumberland	Shippensburg University	1
Dauphin	Millersburg MS/HS Upper Dauphin HS	2
Franklin	Scotland School	1
Lancaster	Hempfield HS	1
Lebanon	Northern Lebanon HS	1
Schuylkill	Schuylkill Haven HS	1
York	No demo	

### 4. Emergency Worker Monitoring / Decontamination Stations (Out of Sequence)

Time: 7:00 – 9:30 PM

Cumberland	West Shore Bureau Fire Station #2 Lemoyne	April 15, 2009
Dauphin	None	
Lancaster	Marietta Fire Company	April 15, 2009
Lebanon	Annville Union Hose Fire Company	April 15, 2009
York	Springetts Fire Co 16	April 15, 2009

**ATTACHMENT B**

**PREVIOUS ISSUES**

<b>COUNTY</b>	<b>ARCA NUMBER</b>	<b>FACILITY EVALUATED</b>
<b>State EOC</b>	64-03-6.c.1-P-01	Ten mile sector map is outdated
<b>Cumberland</b>	64-05-6.a.1-P-01	Shippensburg Univ - Not all portals used for initial monitoring
<b>Dauphin</b>	64-07-6.c.1-P-01	Upper Dauphin Complex plan capacity does not correlate with the Shelter Facility Survey
	64-07-3.c.2-P-04	Harrisburg SD plan needs updated and specific school plans need developed
	64-07-3.c.2-P-05	Steelton-Highspire SD plan has no correlation between ECLs and Emergency Conditions
<b>Franklin</b>	64-03-6.a.1-P-05	Faust Jr HS Mass Care Center – Plan needs to show all mon/decon done at reception center
<b>Lancaster</b>	64-07-5.b.1-P-02	Evacuation route for East Donegal Twp is incorrect in plan
	64-07-5.a.3-P-03	Elizabethtown Borough route alert maps need updated
	64-95-18-A-17 (6.a.1)	Lancaster Cty. Mon/Decon/MC Center (Centerville Jr. HS) Disposition of monitoring forms
<b>Lebanon</b>	64-07-3.b.1-A-05	South Londonderry route alert team not told to take KI
	64-07-5.a.3-A-06	South Londonderry route alert team did not complete in 45-minutes
	64-05-6.a.1-P-06	North Lebanon HS – Update Appendix 13 to show mon/decon at reception center
	64-05-1.b.1-P-07	Annville Union Hose FD – No floor plan to show vehicle flow

## **APPENDIX 4: Exercise Scenario**

This appendix contains a summary of the simulated sequence of events used as the basis for invoking emergency response actions by Offsite Response Organizations (OROs) during the Three Mile Island Generating Station (TMI) exercise on April 14, 2009.

The exercise scenario was submitted by the Commonwealth of Pennsylvania. The scenario was approved by the Federal Emergency Management Agency (FEMA) Region III on March 2, 2009.

The summary presented in this appendix is a compilation of exercise scenario materials submitted by the Commonwealth of Pennsylvania and Exelon Nuclear. Events at the plant site that are not pertinent to the ORO response have been omitted.

**Three Mile Island Generating Station  
Plume Exercise  
April 14, 2009**

**Exercise Scenario Summary**

**INITIAL CONDITIONS [1530]**

Unit 1 is at 100% power. Direction for the on-coming shift: Maintain current power level. Unit 1 has been at 100% power for the last 300 days.

The following equipment is out of service:

- “A” Reactor Building Spray pump for maintenance. Expected back in service in 12 hours (alarm B-1-3 4KV ES Motor Lock Out)
- Chemistry is performing reactor (Rx) coolant Sample analysis for increased iodine-131 (I-131) due to minor fuel leaks.
- Radiation monitors RM-A 5/15 are reading at a higher counts per second (cps) (1000 cps) due to fuel leaks

**COMMENCE EMERGENCY DRILL AND INITIATE METEOROLOGY FILE [15:30]**

**EVENT 1 - Threshold Seismic Earthquake Unusual Event Declaration [1535]**

Threshold Seismic Condition Earthquake Alarm PRF-1-2 occurs and Controller Message to inform the simulator control room (SCR) that they feel the motion. Shift Manager declares an Unusual Event per HU-5

**EVENT - Loose Parts Alarm [1542]**

Shift enters Plant Loose Parts procedure per alarm PRF-6-2 and enters procedure OP-TM-220-405. Loose Parts channel 2 is the only channel that provides a background noise.

**EVENT 2 - OBE Earthquake Alert Declaration [1630]**

Operating Basis Earthquake occurs, Earthquake Alarm PRF-1-3 and Controller informs the SCR that they feel motion.

Earthquake causes a flange leak in a De-mineralized Water pipe on the west side of 1B Rad Waste motor control center (MCC) and trips its supply breaker (WDL-V-305 fails ‘Rx Building Drain Tank to Auxiliary building’)

Reactor may be manually tripped, 2 rods do not insert into the core due to foreign material excursion (FME) from the Reactor Coolant pump failure. Power is less than 1% (Group 7 rods)

Trip of “B” Makeup Pump

WDL-V-305 fails (from Rx Building Drain Tank to Intermitted building)

**Shift Emergency Director declares an Alert per HA-5**

\*\*\*\*START OF RELEASE IN PROGRESS\*\*\*\* as indicated by increase of:

RM-A-5G Condenser Off Gas monitor

RM-A-5GH Condenser Off Gas monitor high

RM-A-15 Condenser Off Gas monitor

**EVENT 3 - Rx coolant sample greater than 300 micro curies per gram ( $\mu\text{Ci}/\text{gm}$ ) [1735]**

Chemistry provide results of last reactor coolant sample that indicate greater than 300uc/gm. Shift Manager refers to Tech Spec 3.1.4, EAL RU-3 Fuel Clad Degradation and FA-1 Loss of the Fuel Clad Barriers. All emergency action levels (EALs) are concurrent Alert declarations with no action required at this time.

**EVENT 4 - Reactor Coolant Pump Failure (Site Area Emergency (SAE) Declaration) [1805]**

Reactor Coolant Pump Failure

Aftershock causes the reactor coolant (RC) pump to fail catastrophically, the pump starts to leak to greater than 150 gallons per minute (gpm) (4 minute ramp to 300gpm)

Containment Radiation Monitors increase to about 1.15 R/hr E +3 (expect RM-G-22/23 > 25 r/hr @ 18:08 R/hr)

Containment Radiation RM-G-22/23 >25 r/hr and Indication of RC System leakage. Loss of Reactor Coolant Barrier per 2.C.1

Shift Emergency Director (SED) declares a Site Area Emergency due to FS-1

Loss of Reactor Coolant System 2.C.1

Indication of Reactor Coolant System (RCS) leakage

AND

Loss of the Fuel Clad Barrier per 1.A.1

Coolant activity >300uci/gm Dose Equivalent

I-131

**EVENT 5 - Aftershock cause Reactor Coolant Pump Leakage to Increase [19:15]**

Aftershock causes the RC pump leakage to increase to 500 gpm. This also causes the Reactor Building (RB) pressure to increase to about 4 pounds per square inch gauge (psig) (RB pressure was increasing throughout the scenario now at 4psig)

**EVENT 6- Logic Failure of Reactor Building Purge Exhaust Valves (General Emergency Declaration) [19:55]**

AH-V-1A/B purge valves open causing RB Building Pressure to decrease from 4 psig. 2000 cubic ft/minute flow out of the purge exhaust. RM-A-9 hi reads 20,000 cpm. (Ramp over 10 minutes to match offsite data)

Corporate Emergency Director (CED) / SED recognize a Loss of Containment per 3.E.1 Failure of all isolation valves in any one line to close

AND

Downstream pathway to the environment exists.

CED/SED recognizes a General Emergency per:

Loss of Reactor Coolant System 2.C.1

Containment Radiation RM-G-22/23 >25 r/hr and Indication of RCS leakage

AND

Loss of the Fuel Clad Barrier per 1.A.1

Coolant activity >300uci/gm Dose Equivalent

I-131

AND

Loss of Containment 3.E.1

Failure of all isolation valves in any one line to close

AND

Downstream pathway to the environment exists.

#### **EVENT 7 - "A" RB Spray Pump Restoration [2045]**

"A" Reactor Building Spray pump breaker maintenance is completed. The breaker is installed and the "A" RB Spray pump is operable.

#### **EVENT 8 - DRILL TERMINATION [2130]**

If objectives and demonstrations have been completed, onsite and offsite teams have been evaluated, facility lead controllers are satisfied that facility objectives and demonstration criteria have been completed, the Lead Onsite Controller will communicate with facility leads at each station and determine a termination time. The Training Drill will be terminated. Emergency Response Facilities will be reset for actual response and post-exercise critiques will be held in all key facilities.

## APPENDIX 5: Planning Issues

This appendix contains the Planning Issues assessed during the April 14, 2009 exercise at Three Mile Island (TMI) and those outstanding from earlier exercises. Planning Issues are issues identified in an exercise or drill that do not involve participant performance, but rather involve inadequacies in the plan or procedures. Planning Issues are required to be corrected through the revision and update of the appropriate State and local radiological emergency response plans (RERPs) and/or procedures in accordance with the following schedule:

- Within 120 days of the date of the exercise/drill when the Planning Issue is directly related to protection of the public health and safety.
- During the annual plan review and update (reported in the Annual Letter of Certification) when the Planning Issue does not directly affect the public health and safety. However, when the date for the annual plan review and update is imminent and the responsible organization does not have sufficient time to make the necessary revisions in the plans and/or procedures, the revised portion of the plans and/or procedures should be submitted in the subsequent annual plan review and update and reported in the Annual Letter of Certification.

Any requirement for additional training of responders to radiological emergencies necessitated by the revision and update of the plans and/or procedures must be completed within the timeframes described above in order for the Planning Issue to be considered resolved.

### NEW PLANNING ISSUES

#### Conoy Township Emergency Operations Center (Lancaster County)

##### Issue Number: 64-09-5.a.3-P-01

**Condition:** Backup route alerting maps do not detail specific routes with beginning and end points.

**Possible Cause:** Backup route alerting plans are not detailed. Teams are assigned sectors instead of routes.

**References:** NUREG-0654, E.6; Appendix 3, Section B.2.(c)

**Effect:** Without specific backup route assignments, it is not possible to determine if all streets and roads have been notified within the prescribed 45 minute time frame.

**Recommendation:** Develop maps and route descriptions which provide detailed directions defining backup route alerting routes from beginning to end. Include these documents in the Conoy Township backup alerting plan.

**Schedule of Corrective Actions:** Agreed. Route descriptions will be developed that show starting points, ending points, and the actual route of travel for the entire sector.

### **Elizabethtown Borough Emergency Operations Center (Lancaster County)**

#### **Issue Number: 64-09-5.a.3-P-02**

**Condition:** Backup route alerting maps do not detail specific routes with beginning and end points.

**Possible Cause:** Backup route alerting plans are not detailed. Teams are assigned sectors instead of routes.

**References:** NUREG-0654, E.6; Appendix 3, Section B.2.(c)

**Effect:** Without specific backup route assignments, it is not possible to determine if all streets and roads have been notified within the prescribed 45 minute time frame.

**Recommendation:** Develop maps and route descriptions which provide detailed directions defining backup route alerting routes from beginning to end. Include these documents in the Elizabethtown Borough backup alerting plan.

**Schedule of Corrective Actions:** Agreed. Route descriptions will be developed that show starting points, ending points, and the actual route of travel for the entire sector.

### **South Londonderry Township (Lebanon County)**

#### **Issue Number: 64-09-5.a.3-P-03**

**Condition:** The roads in Oliver's Mobile Home Park were not shown on the route alerting map.

**Possible Cause:** Possible changes in residential area of South Londonderry Township.

**References:** NUREG-0654, E.6; Appendix 3, Section B.2.(c)

**Effect:** Possible delays in or missed notifications.

**Recommendation:** Revise the maps to clearly show all roads that are included in the route.

**Schedule of Corrective Actions:** Agreed. Maps will be revised to show all roads.

## RESOLVED PLANNING ISSUES

### Franklin County Mass Care – Faust Jr. High School

**Issue Number: 64-03-6.a.1-P-05**

**Condition:** The emergency plan for Franklin County lists Faust Junior High School as one of three monitoring/decontamination centers. However, all monitoring and decontamination would be performed at the Reception Center at Scotland School.

**Corrective Action Demonstrated:** This issue has been administratively closed. Faust Jr. High School is no longer used for Franklin County Mass Care.

### Cumberland County Monitoring/Decontamination – Shippensburg University

**Issue Number: 64-05-6.a.1-P-01**

**Condition:** Only one portal monitor was planned for the initial intake at the entrance to the decontamination and monitoring facility. However, two other portal monitors were available.

Monitoring an evacuee, with the portal monitor, requires approximately 10-15 seconds per person, if uncontaminated. Therefore, the required 5,820 people would take approximately 1455 minutes or 24 hours to go through this single portal, if everyone were uncontaminated. All three portal monitors are necessary at the initial monitoring station to meet the monitoring requirements and allow for delays caused by processing contaminated individuals.

**Corrective Action Demonstrated:** On Wednesday, April 15, 2009, at the Henderson Gymnasium, Shippensburg University, Shippensburg, PA, Cumberland County successfully demonstrated the ability to monitor evacuees in a timely manner. Cumberland County is responsible for receiving 5820 evacuees from Dauphin County at Shippensburg University. 20% (1164) must be monitored in twelve hours. Using a portal monitor, six evacuees were successfully monitored in 32 seconds. This is a rate of ten evacuees per minute or 600 per hour. Even at half this rate (300 per hour) the required 1164 could be monitored in less than four hours.

## **Lebanon County Emergency Worker Monitoring/Decontamination Center – Annville Union Hose Fire Department**

**Issue Number: 64-05-1.b.1-P-07**

**Condition:** There is no diagram/schematic floor plan for the monitoring/decontamination of the vehicles.

**Corrective Action Demonstrated:** A floor plan showing the designated areas for emergency vehicle monitoring and decontamination was prepared and was in use during the 2009 exercise at the Lebanon County Emergency Worker Monitoring and Decontamination Station at Annville Union Hose Fire Company.

## **Dauphin County Mass Care Center – Upper Dauphin Complex**

**Issue Number: 64-07-6.c.1-P-01**

**Condition:** The capacity of the Upper Dauphin School Complex Mass Care Center shown in the Dauphin County Pennsylvania Emergency Management Agency Emergency Operations Plan, Supplemental Information, Dauphin County Mass Care Center Capacities (dated 3-19-03) does not agree with the capacity indicated in the Shelter Facility Survey (Form 6564). The Plan indicates the capacity for the Upper Dauphin School Complex Mass Care Center is 540 for the Elementary School and 530 for the Middle School for a total capacity of 1070. The Shelter Facility Survey (for both schools combined) indicates evacuation capacity of 352 at 20 square feet per person and general capacity of 117 at 60 square feet per person.

**Corrective Action Demonstrated:** The Central Dauphin School District Plan (December 2008), which supports the Dauphin County Emergency Operations Plan, contains a Mass Care Center Capacities attachment which accurately reflects the capacity information from the Red Cross Shelter Facility Surveys for all Mass Care facilities in Dauphin County. This includes the Upper Dauphin School Complex Mass Care Center which was evaluated in 2007, as well as the Upper Dauphin High School which is being evaluated in this exercise.

## **Lancaster County Emergency Operations Center**

**Issue Number: 64-07-5.b.1-P-02**

**Condition:** The evacuation route for residents of East Donegal Township (North of Donegal Springs Road) is incorrectly stated in the plan.

**Corrective Action Demonstrated:** Annex E, Appendix 10, page E-10-5 was updated in December 2008. The information in the plan is now accurate and

reflects the information provided to the public in the “Important TMI Emergency Information” section of the Cumberland, Dauphin, Lancaster, Lebanon, and York County’s telephone books.

### **Elizabethtown Borough Back-up Route Alerting**

#### **Issue Number: 64-07-5.a.3-P-03**

**Condition:** Route Alerting Maps contained in the Elizabethtown Regional EMA Emergency Operations Plan are out of date and do not reflect the current number of new developments and roads that have been built.

**Corrective Action Demonstrated:** The maps for the Lancaster County municipalities have been revised and incorporated into the Elizabethtown Borough plan.

### **Dauphin County, Steelton-Highspire School District – Steelton-Highspire High School**

#### **Issue Number: 64-07-3.c.2-P-05**

**Condition:** The Steelton-Highspire School District Emergency Operations Plan is confusing in regards to Emergency Classification Levels (ECLs) and Emergency Conditions listed in the plan.

**Corrective Action Demonstrated:** Adoption of the updated emergency plan clears Issue Number 64-07-3.c.2-P-05. The new plan explicitly identifies actions to be taken by specified staff at each ECL.

## **PRIOR PLANNING ISSUES UNRESOLVED**

### **State Emergency Operations Center**

#### **Issue Number: 64-03-6.c.1-P-01**

**Condition:** Population Census data contained in the Pennsylvania Emergency Operations Plan is not based on the most current census information available. The population for the Three Mile Island Emergency Planning Zone is based on the 1990 Census. (Pennsylvania Emergency Operations Plan, Annex E, Appendix 4, Attachment F, page E-4-16; NUREG-0654, J.10.h; J.12)

**Reason Issue Remains Unresolved:** The State has developed Interim Guidance, “Attachment E, Three Mile Island Nuclear Generating Station, Site Characteristics.” Tab 1 (“Attachment E, TMI EPZ Information”) includes a table which reflects the risk population and mass care requirement for each EPZ municipality based on the 2000 Census. However, the plan has not been revised.

Therefore, until the plan is updated reflecting current EPZ population data, this issue remains open.

**Schedule of Corrective Actions:** Issue will be resolved once the new plan is completed and issued.

### **Lebanon County Monitoring/Decontamination and Mass Care Center – Northern Lebanon High School**

#### **Issue Number: 64-05-6.a.1-P-06**

**Condition:** Attachment A of Appendix 13 indicates that “mass care centers for evacuees will serve as points where radiological contamination monitoring and decontamination will be conducted.” (See Page E-13-11.) Additionally, Appendix 12 instructs the Mass Care Coordinator to “ensure that trained monitoring/ decontamination teams have reported to each mass care center...” However, during the demonstration the Mass Care Coordinator stated that monitoring and decontamination would be done at the reception center.

**Reason Issue Remains Unresolved:** Attachment A, Appendix 13 (Page E-13-11) of the Lebanon County Emergency Operations Plan, Annex E, Part One has been changed to read “mass care centers and sometimes Reception Centers, e.g. Lebanon County Career and Technical Center, for evacuees will serve as points where radiological contamination monitoring and decontamination will be conducted.”

However, Attachment A, Appendix 12 (Page E-12-2) of the same County Plan still states that the Mass Care Coordinator will “ensure that trained monitoring/decontamination teams have reported to each mass care center...” This is an inaccuracy because not all mass care center locations in the County perform monitoring and decontamination functions.

**Schedule of Corrective Actions:** This incongruity will be corrected in the next plan revision.

### **Dauphin County, Harrisburg School District – Harrisburg Career/Technical Academy**

#### **Issue Number: 64-07-3.c.2-P-04**

##### **Condition:**

- In section II, Purpose, the February 2005 version of the Harrisburg School District Emergency Evacuation Plan for TMI states, “This plan addresses the phased evacuation of schools in proximity to, but not within the plume exposure pathway emergency planning zone”. There is no additional information on the phased evacuation in the body of the plan.

- Individual schools in the district do not have emergency plans as referenced in section VIII.C.3 of the February 2005 version of the Harrisburg School District Plan.
- The district plan does not reflect the new student/parent notification system.

**Reason Issue Remains Unresolved:** The Harrisburg School District plan was updated in February 2009 and includes a Foose School plan in Appendix 4. However, the items below were not corrected:

- The 2009 district plan does not include individual emergency plans for Roland and Melrose Schools.
- The 2009 district plan does not reflect the new student/parent notification system.

**Schedule of Corrective Actions:** These items will be corrected in the next plan revision.