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FEMA

JUL 2 8 2011

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

To whom it may concern:

Enclosed is the final After Action Report/Improvement Plan for the Three Mile Island (TMI) Nuclear Generating Station Radiological Emergency Preparedness (REP) Exercise that was held on April 12, 2011.

There were no deficiencies identified during the exercise. Nine Areas Requiring Corrective Action (ARCAs) were identified; four were immediately re-demonstrated successfully and five others were re-demonstrated successfully on April 29, and May 9, 2011. One ARCA from a previous exercise was successfully re-demonstrated on May 2, 2011. Two new planning issues were identified and have been resolved.

Based on the review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate and there is reasonable assurance they can be implemented, as demonstrated during the TMI REP Exercise.

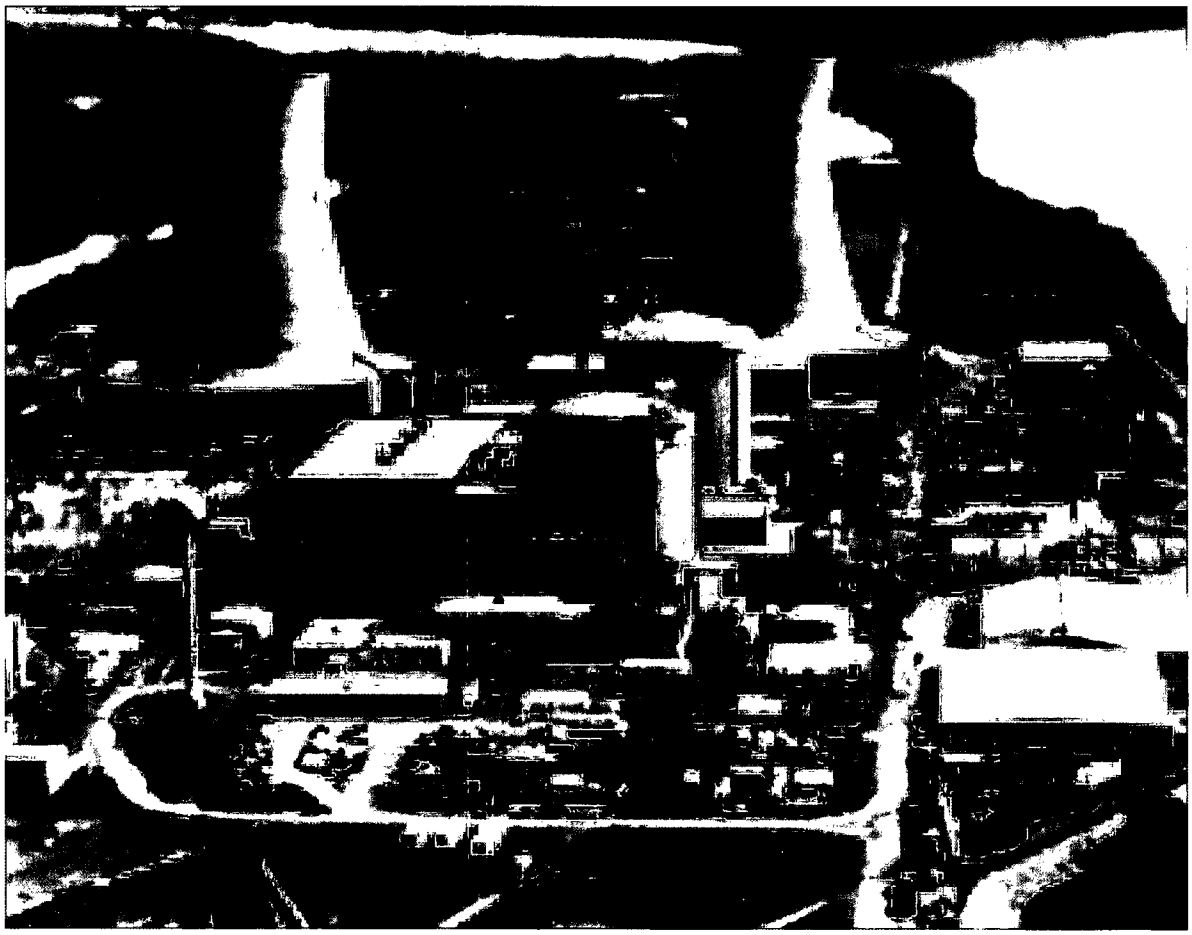
If you have any questions, please contact Darrell Hammons at (215) 931-5546.

Sincerely,

MaryAnn Tierney
Regional Administrator

Enclosure

A445
NRR



# Three Mile Island Nuclear Generating Station

# After Action Report/ Improvement Plan

Exercise Date - April 12, 2011

Radiological Emergency Preparedness (REP) Program

FEMA

*Published July 27, 2011*

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

*Published July 27, 2011*

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# EXECUTIVE SUMMARY

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 Nuclear Station accident in March 1979.

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

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

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

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

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

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

- U.S. Department of Commerce,
- U.S. Nuclear Regulatory Commission,

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

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

A REP exercise was conducted on April 12th and 13th, 2011 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 Nuclear 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 1 of this report, entitled "Exercise Overview," presents the Exercise Planning Team and the Participating Organizations.

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

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

Section 4, "Conclusion," is a description of the Region's overall assessment of the capabilities of the participating organizations.

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

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

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

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

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

EPZ 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 msl. Hills on both sides of the river in this vicinity rise to elevations of over 500 feet. The plant grade is 300 feet above msl.

An access bridge for plant personnel connects State Route 441 with the north end of the island. A wooden bridge connects the southern portion of the island with State Route 441. 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 Nuclear Power 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, Conrail, and the Maryland and Pennsylvania Railroad.

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

On the basis of the 2010 census, the total population of the 10-mile EPZ is 226,160. There are 97 sirens used to provide coverage of the plume exposure pathway EPZ. The county in which it is located operates each siren system.

# SECTION 1: EXERCISE OVERVIEW

## 1.1 Exercise Details

**Exercise Name**
Three Mile Island Nuclear Generating Station

**Type of Exercise**
Plume

**Exercise Date**
April 12, 2011

**Program**
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

**Scenario Type**
Radiological Emergency

## 1.2 Exercise Planning Team Leadership

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## 1.3 Participating Organizations

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

State Jurisdictions

- PA Department of Environmental Protection Bureau of Radiation Protection
- Pennsylvania Bureau of Radiation Protection
- Pennsylvania Department of Corrections
- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of General Services
- Pennsylvania Department of Health
- Pennsylvania Department of Public Works
- Pennsylvania Department of Transportation
- Pennsylvania Emergency Management Agency
- Pennsylvania National Guard
- Pennsylvania Office of Administration
- Pennsylvania Public Utilities Commission
- Pennsylvania State Police

Risk Jurisdictions

- Allen Middle School Principal
- Allen Middle School Staff
- Annville Union Hose Fire Company
- Avon Volunteer Fire Department
- Capital Area Intermediate Unit #15 Staff
- Captial Area School For The Arts Staff
- Cedar Cliff High School Principal and Staff
- Central Dauphin East High School Staff
- Central Dauphin East High School Superintendent
- Central York Middle School Assistant Principal
- Central York Middle School Principal
- Central York School District Staff
- Central York School District Superintendent
- Cumberland County
- Cumberland County Public Safety

Cumberland County Special Hazards Operations Team
Cumberland Decontamination Strike Team
Dauphin County Emergency Management Agency
Dauphin County HAZMAT
Department of Public Safety
Derry Township Police
Derry Township Superintendent
Donegal (Maytown) Fire
Donegal Ambulance
Donegal Communications
Donegal High School Principal
Donegal PIO
Donegal Police
Donegal Public Works
Donegal School District Project Control Manager
Donegal Springs Elementary School Principal
Donegal Springs Elementary School Staff
Donegal Supervisors
Dover Area School District Administration and Staff
Dover Intermediate School Principal
Dover Intermediate School Staff
Eastern York Administration and Staff
Elizabethtown Emergency Management Agency
Elizabethtown Fire Department
Elizabethtown Police Department
Elizabethtown Public Works Department
Environmental Products and Services of Vermont Inc (contractor to Dauphin County)
Fairview Elementary School Principal
Glen Rock Hose & Ladder Co.
Hampden Township Fire Company
Hayshire Elementary School Assistant Principal
Hayshire Elementary School Principal
Highland Elementary School Principal

Highland Elementary School Staff
Kreutz Creek Elementary School Principal
Lancaster County Dept of Education
Lancaster County Emergency Management Agency
Lancaster County Police Department
Lancaster County Public Safety
Lancaster County RACES
Lancaster County Sheriff
Lancaster Medial Services
Lebanon County Hazardous Materials Team
Lebanon County Hazmat Team
Lebanon Valley Chapter
Lower Dauphin High School Principal
Lower Dauphin High School Staff
Middletown Area School District Principal
Mill Road Elementary School Principal
Milton Hershey School EOC Staff
Monaghan Township Volunteer Fire Company
Mount Joy Fire Department
Mount Joy Police
New Cumberland Borough Fire Department
New Cumberland Borough Police Department
New Cumberland Middle School Principal and Staff
New Cumberland MS Crisis Team
New Cumberland MS Principal
Newville Community EMS
Newville Fire Company
Northeastern School District Assistant Superintendent
Northeastern Middle School Principal and Staff
North West Regional Emergency Medical Services
Palmyra High School Principal
Price School Principal
RACES
Red Mill Elementary School Principal

Red Mill Elementary School Staff
Rheems Fire Department
Roundtown Elementary Principal and Staff
Scott Early Childhood Center Staff
Shallow Brook Intermediate Principal and Staff
Shimmell School Principal
Shimmell School Staff
South Hanover Elementary School Principal
Spring Forge Bus Driver
Spring Forge Nurse
Spring Forge Principal
Steelton-Highspire School Principal
Steelton-Highspire School Staff
Swatara Middle School Principal
Swatara Middle School Staff
Tri Community School Principal
Tri Community School Staff
West shore Bureau of Fire
West Shore Emergency Medical Services (MS)
West Shore School District Administration and Staff
York County ARES/RACES
York County HAZMAT
York Haven Elementary School Principal
York County Office of Emergency Management
York County Commissioners
York County 911
York County Penn State Cooperative Extension
York Haven Elementary School Staff

Support Jurisdictions

Adams County
American Red Cross
County Department of Corrections
County RACES Team
Department of Transportation

Fire Department
Health Department
Orwigsburg Fire Department
Pennsylvania Department of Corrections
Schuylkill County - Police Department
Pottsville Fire Department
Schulykill County Emergency management Agency
Schuylkill County 911 Center
Schuylkill County Emergency Management Agency
Schuylkill County Geographic Information System Office
Schuylkill County Incident Management Team
Schuylkill County Local Emergency Planning Committee
Schuylkill County Planning Department
Schuylkill County Sheriff Department
United States Department of Agriculture

Private Organizations

Exelon

# SECTION 2: EXERCISE DESIGN SUMMARY

## 2.1 Exercise Purpose and Design

On April 12, 2011, 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 13, 2011. 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 14, 2009.

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 New Cumberland Borough, Harrisburg City, Highspire Borough, Londonderry Township, Lower Paxton Township, Paxtang Borough, South Hanover Township, East Donegal Township, Elizabethtown Borough/West Donegal Township/Mount Joy Township, South Londonderry Township, Dover Township, Lewisberry Borough/Newberry Township, Manchester Township, and Mt. Wolf/ East Manchester/ Manchester 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 13, 2011 in Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Schuylkill, and York Counties.

• Emergency Worker Monitoring and Decontamination: Conducted on April 13, 2011 in Cumberland, Lancaster, Lebanon, and York Counties.

• Traffic/Access Control: Conducted on April 13, 2011 at the Harrisburg State Police Barracks.

• Schools: Conducted on April 12, 2011 in Dauphin, Lancaster, Lebanon, and York Counties.

## 2.2 Exercise Objectives, Capabilities and Activities

The objective of the TMI 2011 Plume Exercise is to demonstrate the capabilities of State and local emergency management agencies to mobilize emergency management and emergency response personnel, to activate emergency operations centers and support facilities, and to protect the health, lives, and property of the citizens residing within the 10-mile Emergency Planning Zone (EPZ).

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

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

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

## 2.3 Scenario Summary

NOTE: All information below is scenario simulated. The times for the events are approximate.

At 1600 on April 12, 2011, the exercise begins. TMI Unit 1 a Pressurized Water Reactor is operating at 100 percent power. The weather forecast is winds at 7 miles per hour (mph) from the West to the East. The temperature high today will be 60 degrees.

At 1605 a mobile crane crashes into the Condensate Storage Tank and there is visible damage to the tank. At 1620, an ALERT is declared by the Shift Manager in accordance with Emergency Action Level (EAL) HA5, "vehicle crash within the Protected Area resulting in visible damage to equipment contained in any Table H2 area". There is no radioactive release as a result of this event. TMI Unit 1 continues to operate at 100 percent power.

At 1645 a control rod will drop into the core and the reactor power drops to 55 percent. At 1715, the main turbine trips and this causes an automatic shutdown of the reactor. At 1730, there is a tube rupture in the "A" steam generator with a leak rate of reactor coolant into the steam generator of 700 gallons per minute. This causes the reactor pressure to lower to 1600 pounds per square inch and results in the initiation of the engineered safeguards actuation system (ESAS). At 1730, an abnormal release of radioactive material commences through the stuck open atmospheric dump valve on steam generator "A". The source for this release is normal reactor coolant radioactivity that is significantly elevated by the rapid depressurization of the reactor coolant system when the steam generator tube rupture occurs. The fuel clad remains intact. This release continues through the end of the exercise. The wind speed is 4 mph, the wind direction is from the west to the east and the atmospheric stability class is B. A Site Area Emergency should be declared by 1745 based on Emergency Action Level FS1, "Steam generator tube rupture that requires ESAS actuation and primary to secondary leak rate greater than 10 gallons per minute".

At 1800 a low pressure injection pump trips greatly reducing the ability to add water into the reactor system. At 1900, a large reactor coolant leak commences into the containment. By approximately 1915, a General Emergency should be declared based on Emergency Action Level FG1, "greater than 25 degree superheat and steam generator tube rupture with ESAS actuation and primary to secondary leak rate of greater than 10 gallons per minute". The Licensee issues a Protective Action Recommendation as, "Evacuate 0-5 miles 360° and shelter the remainder of the 10 mile EPZ and advise the general public to administer KI in accordance with the state plan." The Licensee and State dose projections indicate that the EPA protective

action guides (PAG) are not exceeded offsite. The wind speed is 4 mph and the wind direction is from the west to the east. The wind direction continues to shift slowly and by 2100 the wind direction is from the west south west into the east north east.

At 2100 the TMI Evaluated Exercise will end if all objectives are met.

# SECTION 3: ANALYSIS OF CAPABILITIES

## 3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the April 12 and 13, 2011, biennial Radiological Emergency Preparedness (REP) Exercise.

Each jurisdiction and functional entity were evaluated on the basis of its demonstration of the Exercise Evaluation Area Criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the Exercise Evaluation Area Criteria and the Extent-of-Play Agreement used in this exercise are found in Appendix E.

The Pennsylvania Bureau of Radiation Protection Field Monitoing Teams, Adams County Monitoring and Decontamination and Mass Care, and Lacaster County Emergency Operations Center participated in this exercise, but were exempted from evaluation because they had been previously evaluated in another exercise. Therefore, results of their participation will appear as an "N" on Table 3.1, "Summary of Exercise Evaluation."

## 3.2 Summary Results of Exercise Evaluation

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 nine Areas Requiring Corrective Action (ARCAs) identified as a result of this exercise; four of the ARCAs were successfully re-demonstrated during the exercise. Five ARCAS were re-demonstrated on April 29, and May 9, 2011. One ARCA from a previous exercise was successfully re-demonstrated on May 2, 2011. Two new planning issues were identified, both of which have been resolved. (see Appendix 5 for resolution for all planning issues)

## Table 3.1 - Summary of Exercise Evaluation (12 pages)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | PA EOC | PA JIC | EJIC | PA AAC SEOC-BRP | PA TACP SPBH | CuCo EOC | CuCo EWMDS WSFS2 L | CuCo RC BSHS | CuCo MDC BSHS | CuCo MCC BSHS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | M | | M | M | | M | | | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | M | | | M | | M | | | | |
| Communications Equipment | 1d1 | M | M | | M | M | M | | | | |
| Equip & Supplies to support operations | 1e1 | M | | | M | M | M | M | M | M | M |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | M | | M | | | | |
| Radiological Assessment and PARs | 2b1 | | | | M | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | M | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | M | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | M | M | M | | M | |
| Implementation of KI decision | 3b1 | M | | | | M | M | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | M | | | | |
| Implementation of protective actions for Schools | 3c2 | | | | | | M | | | | |
| Implementation of traffic and access control | 3d1 | M | | | | M | M | | | | |
| Impediments to evacuation are identified and resolved | 3d2 | M | | | | M | M | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | M | M | | | | M | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | M | M | | | M | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | M | M | M | M |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | M | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | | M |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 2/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | CuCo NCmbrBr EOC | CuCo NCmbrBr BuRA | DaCo EOC | DaCo EWMDS HACC | DaCo MCC LES | DaCo MCC HAHS | DaCo HbgCty EOC | DaCo HisprBr EOC | DaCo Hispr BuRa | DaCo Lndndry Twp EOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | M | | M | | | | M | M | | M |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | M | | M | | | | M | M | | M |
| Communications Equipment | 1d1 | M | M | M | | | | M | M | M | M |
| Equip & Supplies to support operations | 1e1 | M | M | M | M | M | M | M | M | M | M |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | M | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | M | | M | | | | M | M | | M |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | M | M | M | M | | | M | M | M | M |
| Implementation of KI decision | 3b1 | M | M | M | | | | M | M | M | M |
| Implementation of protective actions for special populations - EOCs | 3c1 | M | | M | | | | M | M | | M |
| Implementation of protective actions for Schools | 3c2 | M | | M | | | | | | | |
| Implementation of traffic and access control | 3d1 | M | | M | | | | M | M | | M |
| Impediments to evacuation are identified and resolved | 3d2 | M | | M | | | | M | M | | M |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | M | | M | | | | M | | | M |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | M | M | | | | | | M | M | |
| Emergency information and instructions for the public and the media | 5b1 | | | M | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | M | M | M | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | M | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | M | M | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 3/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | DaCo PxtngBr EOC | DaCo LwrPxtnTwp EOC | DaCo SoHnvr Twp EOC | LaCo EOC | LaCo EWMDS MJFD | LaCo MCC CVHS | LaCo MCC CVMS | LaCo RC PrkCtyMl | LaCo MDC MTSC | LaCo MCC CMS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | M | M | M | N | | | | | | |
| Facilities | 1b1 | | | | | | M | M | | | M |
| Direction and Control | 1c1 | M | M | M | M | | | | | | |
| Communications Equipment | 1d1 | M | M | M | N | | | | M | | |
| Equip & Supplies to support operations | 1e1 | M | M | M | N | M | | | M | M | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | N | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | M | M | M | N | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | M | M | M | M | M | | | | M | |
| Implementation of KI decision | 3b1 | M | M | M | N | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | M | M | M | N | | | | | | |
| Implementation of protective actions for Schools | 3c2 | | | | N | | | | | | |
| Implementation of traffic and access control | 3d1 | M | M | M | N | | | | M | | |
| Impediments to evacuation are identified and resolved | 3d2 | M | M | M | N | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | M | M | M | N | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | N | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | N | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | M | M | M | | M | M |
| Mon/decon of emergency worker equipment | 6b1 | | | | | M | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | M | M | | | M |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 4/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | LACO CHS MCC | LaCo MCC MTHS | LaCo MCC MTMS | LaCo MCC WHS | LaCo MCC WMS | LaCo CnyTwp EOC | LaCo CoTwp BuRA | LaCo EDnglTwp EOC | LaCo EDnglTwp BuRA | LaCo EtwnBr/WDnglTwp/MtJyTwp EOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | | | | | | M | M | M |
| Facilities | 1b1 | M | M | M | M | M | | | | | |
| Direction and Control | 1c1 | | | | | | | | M | | M |
| Communications Equipment | 1d1 | | | | | | | | M | M | M |
| Equip & Supplies to support operations | 1e1 | | | | | | | | M | M | M |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | M | | M |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | M | M | M | M | M |
| Implementation of KI decision | 3b1 | | | | | | | | M | M | M |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | M | | M |
| Implementation of protective actions for Schools | 3c2 | | | | | | | | | | |
| Implementation of traffic and access control | 3d1 | | | | | | | | M | | M |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | M | | M |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | M | M | M |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | M | M | M | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | M | M | M | M | M | | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | M | N | M | M | M | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 5/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | LaCo EtwnBr TACP | LaCo SRPD TACP | LeCo EOC | LeCo EWMDS AUHFD | LeCo RC LCCTC | LeCo MDC LCCTC | LeCo MCC NLHS | LeCo SLTwp EOC | LeCo SLTwp BuRA | LeCo SLTwp TACP |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | M | | | | | M | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | | | M | | | | | M | | |
| Communications Equipment | 1d1 | M | M | M | | M | | | M | M | M |
| Equip & Supplies to support operations | 1e1 | M | M | M | M | M | M | M | M | M | M |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | M | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | M | | | | | N | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | M | M | M | M | | M | | M | M | M |
| Implementation of KI decision | 3b1 | M | M | M | | | | | X | M | M |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | M | | | | | M | | |
| Implementation of protective actions for Schools | 3c2 | | | M | | | | | | | |
| Implementation of traffic and access control | 3d1 | M | M | M | | M | | | M | | M |
| Impediments to evacuation are identified and resolved | 3d2 | M | M | M | | | | | M | | M |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | M | | | | | M | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | M | | | | | M | M | |
| Emergency information and instructions for the public and the media | 5b1 | | | M | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | M | | M | M | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | M | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | M | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 6/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | YC EOC | YC EWMDS MFD | YC RC SSC | YC MDC SSCHS | YC MCC SSC | YC DvrTwp EOC | YC LBNT EOC | YC NwbryTwp BuRA | YC MnchstrTwp EOC | YC NEA EOC |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | M | | | | | M | M | | M | M |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | M | | | | | M | M | | M | M |
| Communications Equipment | 1d1 | M | | M | | | M | M | M | M | M |
| Equip & Supplies to support operations | 1e1 | M | M | M | M | M | M | M | M | M | M |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | M | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | M | | | | | M | M | | M | M |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | M | M | | M | | M | M | M | M | M |
| Implementation of KI decision | 3b1 | M | | | M | | M | M | M | M | M |
| Implementation of protective actions for special populations - EOCs | 3c1 | M | | | | | M | | | M | M |
| Implementation of protective actions for Schools | 3c2 | M | | | | | | | | | |
| Implementation of traffic and access control | 3d1 | M | | M | | | M | M | | M | M |
| Impediments to evacuation are identified and resolved | 3d2 | M | | | | | M | M | | M | M |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | M | | | | | M | M | | M | M |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | M | | | | | | M | M | | |
| Emergency information and instructions for the public and the media | 5b1 | M | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | M | | M | M | | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | M | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | M | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 7/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | AdCo EOC (S) | FrCo EOC (S) | FrCo RC FJHS | FrCo MDC FJHS | FrCo MCC FJHS | ScCo EOC (S) | ScCo RC BMHS | ScCo MDC BMHS | ScCo MCC BMHS | DaCo CAIU ABldg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | M | M | | | | M | | | | |
| Facilities | 1b1 | | M | | | | | | | | |
| Direction and Control | 1c1 | M | M | | | | M | | | | |
| Communications Equipment | 1d1 | M | M | M | | | M | M | | | |
| Equip & Supplies to support operations | 1e1 | M | M | M | M | M | M | M | M | M | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | | | | | |
| Implementation of KI decision | 3b1 | | | | | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | | | | | | | | | | M |
| Implementation of traffic and access control | 3d1 | | | M | | | | M | | | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | M | M | | | | M | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | M | M | | | M | M | |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | M | | | | M | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

Table 3.1 - Summary of Exercise Evaluation (Continued. page 8/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | DaCo CAIU CASS | DaCo CenDa SD | DaCo CenDa SD CDEHS | DaCo CenDa SD SMS | DaCo CenDSD TCES | DaCo DrryTwpSD | DaCo DryTwp HIES | DaCo DTSD HMS | DaCo HBGSD | DaCo HSBGSD HHS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | | | | | | | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | | | | | | | | | | |
| Communications Equipment | 1d1 | | | | | | | | | | |
| Equip & Supplies to support operations | 1e1 | | | | | | | | | | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | | | | | |
| Implementation of KI decision | 3b1 | | | | | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | M | M | M | M | M | M | M | M | M | M |
| Implementation of traffic and access control | 3d1 | | | | | | | | | | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 9/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | DaCo HSD SctSchl | DaCo HSD ShmSchl | DaCo LDSD | DaCo LDSD LDHS | DaCo LDSD PB | DaCo LDSD SHES | DaCo MASD | DaCo MASD MHS | DaCo MilHrshyS | DaCo SHSD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | | | | | | | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | | | | | | | | | | |
| Communications Equipment | 1d1 | | | | | | | | | | |
| Equip & Supplies to support operations | 1e1 | | | | | | | | | | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | | | | | |
| Implementation of KI decision | 3b1 | | | | | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | M | M | M | M | M | M | M | M | M | M |
| Implementation of traffic and access control | 3d1 | | | | | | | | | | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

Table 3.1 - Summary of Exercise Evaluation (Continued. page 10/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | DaCo SHSD SHHS | LaCo DSD | LaCo DSD DHS | LaCo DSD DSES | LaCo EASD | LaCo EASD EHSES | LaCo EASD FES | LaCo EASD MRES | LeCo PASD | LeCo PASD PHS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | | | | | | | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | | | | | | | | | | |
| Communications Equipment | 1d1 | | | | | | | | | | |
| Equip & Supplies to support operations | 1e1 | | | | | | | | | | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | | | | | |
| Implementation of KI decision | 3b1 | | | | | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | M | M | M | M | M | M | M | M | M | M |
| Implementation of traffic and access control | 3d1 | | | | | | | | | | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 11/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | YC CYSD | YC CYSD CYMS | YC CYSD HES | YC CYSD RES | YC DASD | YC DASD DIS | YC EYSD | YC EYSD KCES | YC NESD | YC NESD NEMS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | | | | | | | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | | | | | | | | | | |
| Communications Equipment | 1d1 | | | | | | | | | | |
| Equip & Supplies to support operations | 1e1 | | | | | | | | | | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | | | | | |
| Implementation of KI decision | 3b1 | | | | | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | M | M | M | M | M | M | M | M | M | M |
| Implementation of traffic and access control | 3d1 | | | | | | | | | | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | | | | |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | | |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

## Table 3.1 - Summary of Exercise Evaluation (Continued. page 12/12)

| DATE: 2011-04-12<br>SITE: Three Mile Island Nuclear Generating Station, PA<br><br>M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated | | YC NESD SBIS | YC NESD SFIS | YC NESD YHES | YC WSSD | YC WSSD AMS | YC WSSD CCHS | YC WSSD HilndES | YC WSSD NCMS | YC WSSD RMES | LeCo MCC ELCHS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Emergency Operations Management | | | | | | | | | | | |
| Mobilization | 1a1 | | | | | | | | | | |
| Facilities | 1b1 | | | | | | | | | | |
| Direction and Control | 1c1 | | | | | | | | | | |
| Communications Equipment | 1d1 | | | | | | | | | | |
| Equip & Supplies to support operations | 1e1 | | | | | | | | | | |
| Protective Action Decision Making | | | | | | | | | | | |
| Emergency Worker Exposure Control | 2a1 | | | | | | | | | | |
| Radiological Assessment and PARs | 2b1 | | | | | | | | | | |
| Decisions for the Plume Phase -PADs | 2b2 | | | | | | | | | | |
| PADs for protection of special populations | 2c1 | | | | | | | | | | |
| Rad Assessment and Decision making for the Ingestion Exposure Pathway | 2d1 | | | | | | | | | | |
| Rad Assessment and Decision making concerning Relocation, Reentry, and Return | 2e1 | | | | | | | | | | |
| Protective Action Implementation | | | | | | | | | | | |
| Implementation of emergency worker exposure control | 3a1 | | | | | | | | | | |
| Implementation of KI decision | 3b1 | | | | | | | | | | |
| Implementation of protective actions for special populations - EOCs | 3c1 | | | | | | | | | | |
| Implementation of protective actions for Schools | 3c2 | M | M | M | M | M | M | M | M | M | |
| Implementation of traffic and access control | 3d1 | | | | | | | | | | |
| Impediments to evacuation are identified and resolved | 3d2 | | | | | | | | | | |
| Implementation of ingestion pathway decisions - availability/use of info | 3e1 | | | | | | | | | | |
| Materials for Ingestion Pathway PADs are available | 3e2 | | | | | | | | | | |
| Implementation of relocation, re-entry, and return decisions. | 3f1 | | | | | | | | | | |
| Field Measurement and Analysis | | | | | | | | | | | |
| Adequate Equipment for Plume Phase Field Measurements | 4a1 | | | | | | | | | | |
| Field Teams obtain sufficient information | 4a2 | | | | | | | | | | |
| Field Teams Manage Sample Collection Appropriately | 4a3 | | | | | | | | | | |
| Post plume phase field measurements and sampling | 4b1 | | | | | | | | | | |
| Laboratory operations | 4c1 | | | | | | | | | | |
| Emergency Notification and Public Info | | | | | | | | | | | |
| Activation of the prompt alert and notification system | 5a1 | | | | | | | | | | |
| Activation of the prompt alert and notification system - Fast Breaker | 5a2 | | | | | | | | | | |
| Activation of prompt alert and notification system-Excptn Areas/Bkup RA | 5a3 | | | | | | | | | | |
| Emergency information and instructions for the public and the media | 5b1 | | | | | | | | | | |
| Support Operations/Facilities | | | | | | | | | | | |
| Mon/decon of evacuees and emergency workers, and registration of evacuees | 6a1 | | | | | | | | | | M |
| Mon/decon of emergency worker equipment | 6b1 | | | | | | | | | | |
| Temporary care of evacuees | 6c1 | | | | | | | | | | M |
| Transportation and treatment of contaminated injured individuals | 6d1 | | | | | | | | | | |

# 3.3 Criteria Evaluation Summaries

## 3.3.1 Pennsylvania Jurisdictions

### 3.3.1.1 Pennsylvania Emergency Operations Center

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

### 3.3.1.2 Pennsylvania Joint Information Center

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

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

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

### 3.3.1.4 Pennsylvania State Traffic and Access Control Points, State Police Barracks Harrisburg

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

### 3.3.2 Risk Jurisdictions

### 3.3.2.1 Cumberland County Emergency Operations Center

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

### 3.3.2.2 Cumberland County Emergency Worker Monitoring and Decontamination Station, West Shore Fire Station #2, Lemoyne

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

### 3.3.2.3 Cumberland County Reception Center, Big Spring High School

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

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

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

### 3.3.2.5 Cumberland County, New Cumberland Borough Emergency Operations Center

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

### 3.3.2.6 Cumberland County, New Cumberland Borough Back-up Route Alerting

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

g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.2.7 Dauphin County Emergency Operations Center

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

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

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

### 3.3.2.9 Dauphin County Mass Care Center, Lenkerville Elementary School

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

### 3.3.2.10 Dauphin County Mass Care Center, Halifax Area High School

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

### 3.3.2.11 Dauphin County, Harrisburg City Emergency Operations Center

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

### 3.3.2.12 Dauphin County, Highspire Borough Emergency Operations Center

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

### 3.3.2.13 Dauphin County, Highspire Back-up Route Alerting

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

### 3.3.2.14 Dauphin County, Londonderry Township Emergency Operations Center

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

ISSUE NO.: 64-11-3a1-P-01

CRITERION: OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers IAW plans and procedures. Emergency workers periodically and at the end of each mission read and record dosimeter reading. (NUREG-0654, K.3)

CONDITION: Direct-reading dosimeters and Dosimetry – KI Report Forms were not provided to Emergency Operations Center (EOC) staff for monitoring radiation exposure within the Londonderry Township EOC.

POSSIBLE CAUSE: There is no specific reference in the Londonderry Township Supplement to the Dauphin County Radiological Emergency Response Procedures/Radiological Officer's checklist to create an Area Monitoring kit, along with the specific equipment necessary.

REFERENCE: NUREG-0654, K.3.and K.3.b; Commonwealth of Pennsylvania, Annex A, Appendix 4, page A-4-3.

EFFECT: Any radiation dose received by the occupants of the Londonderry Township EOC would not be identified until the permanent record dosimeters were processed.

CORRECTIVE ACTION DEMONSTRATED: Londonderry Township revised their Supplement to the Dauphin County Radiological Emergency Response Procedures/Radiological Officer's checklist to require tracking exposure by the use of area DRDs and the Dosimetry – KI Report Form. The Township also revised the EMD's Checklist to reflect his/her oversight of the process.

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

### 3.3.2.15 Dauphin County, Paxtang Borough Emergency Operations Center

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

### 3.3.2.16 Dauphin County, LowerPaxton Township Emergency Operations Center

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.c.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, 5.a.1.
b. AREAS REQUIRING CORRECTIVE ACTION: 3.c.1.

ISSUE NO.: 64-11-3c1-A-01

CRITERION: PADs are implemented for special population groups within areas subject to protective actions. (NUREG-0654, E.7., J.9., 10.c.d.e.g)

CONDITION: Lower Paxton Township (LPT) did not request buses for transportation-dependent individuals during the Alert.

POSSIBLE CAUSE: LPT did not follow the information contained in their plan. The plan identifies that 144 transportation-dependent individuals need three buses to evacuate and this equipment is an unmet need. The Transportation Officer's standard operating procedure (SOP) calls for a request for buses to be made from the LPT to the Dauphin County Emergency Operations Center (EOC) during the Alert. The unmet need was not communicated to Dauphin County.

REFERENCE: NUREG-0654, J.10.d; NUREG-0654, J.10.g; LPT supplement to the Dauphin County Radiological Emergency Response Procedures and the SOP for the LPT Transportation Officer.

EFFECT: Approximately 144 transportation-dependent individuals might not have been evacuated in a timely manner.

CORRECTIVE ACTION DEMONSTRATED: At approximately 1956 hours during the Site Area Emergency, the LPT Emergency Management Coordinator (EMC) requested three buses from Dauphin County Emergency Management Agency (DEMA). DEMA called back at approximately 2012 hours, and indicated the buses would be provided. The buses arrived at the LPT EOC at approximately 2037 hours. The bus drivers were given an emergency worker briefing and told to standby.

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

**3.3.2.17 Dauphin County, South Hanover Township Emergency Operations Center**

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

**3.3.2.18 Lancaster County Emergency Operations Center**

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

ISSUE NO.: 64-11-1c1-A-02

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

CONDITION: The Lancaster County did not timely alert the Conoy Township Route

Alerting (RA) teams.

POSSIBLE CAUSE: The Lancaster County Radiological Emergency Response Procedures requires the RA teams be placed on standby status at an Alert ECL (the procedure specifically lists the fire departments affected during an incident at TMI). The Lancaster County procedures read as if this should be accomplished as an automatic action and does not indicate that Lancaster County should wait until requested by Conoy Township. If Lancaster County procedures were implemented as written, there would not have been the delay in the fire fighters reporting to the Conoy EOC (Bainbridge Fire Department). If the delay in placing RA teams was eliminated, the task and radiological briefings would have been completed prior to the siren failure at Site Area Emergency. If teams were fully briefed and ready to leave the EOC at Site Area Emergency, they may have been able to complete their route within the designated 45 minutes.

REFERENCE: NUREG-0654, F.1.e; Lancaster County RERP, and Master Checklist.

EFFECT: The Conoy Township did not complete the Route Alerting within 45 minutes.

CORRECTIVE ACTION DEMONSTRATED: Lancaster County adequately demonstrated the ability to place RA teams on standby status at an Alert ECL.

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

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

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

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

### 3.3.2.20 Lancaster County Mass Care Center Conestoga Valley High School

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

### 3.3.2.21 Lancaster County Mass Care Center, Conestoga Valley Middle School

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

### 3.3.2.22 Lancaster County Reception Center, Park City Mall

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

### 3.3.2.23 Lancaster County Monitoring and Decontamination Center, Manheim Township School Complex

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

### 3.3.2.24 Lancaster County Mass Care Center ,Cocalico Middle School

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

### 3.3.2.25 Lancaster County, Cocalico High School,Mass Care Center

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

### 3.3.2.26 Lancaster County Mass Care Center, Manheim Township Middle School

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

g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.2.27 Lancaster County Mass Care Center , Warwick High School

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

### 3.3.2.28 Lancaster County Mass Care Center, Warwick Middle School

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

### 3.3.2.29 Lancaster County, Conoy Township Emergency Operations Center

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

ISSUE NO.: 64-09-3a1-A-03

ISSUE: 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.

CORRECTIVE ACTION DEMONSTRATED: On May 2, 2011, re-demonstration of the Conoy Township Backup Route Alerting was conducted at Bainbridge Fire

Department, Conoy Township, Lancaster County. A series of injects simulating an incident at Three Mile Island Nuclear Generating Station were communicated from Lancaster County Department of Public Safety beginning at Alert (1830 hours), escalated to Site Area Emergency at 1845 with an announcement of a siren sounding and activation of the Emergency Alert System. Upon receipt of the Alert notification, the Conoy Township Deputy Emergency Management Coordinator (EMC) mustered his Emergency Operations Center staff, briefed them on the incident at hand, and informed the Radiological Officer (RO), to prepare the Backup Route Alerting Teams for a potential mission. The Radiological Officer explained the appropriate procedure for issuing of dosimetry, Potassium Iodide (KI), proper wear of dosimetry, protective gear, and answered a series of questions relating to radiological protective measures. The RO conducted a thorough and accurate briefing to Two-(2) man Route Alerting Teams.

At approximately 1856 hours, the Deputy EMC was contacted and informed that siren number 410 had failed and took immediate measures to brief the two Route Alerting Teams on their specific routes (Route B), issued maps, and provided specific instructions on the conduct of Route Alerting, notification of hearing impaired, and announcements to the General Public. The members of the Bainbridge Fire Department Route Alerting Team completed the route within 43-minutes of notifications and demonstrated appropriate Route Alerting and drill protocols throughout the exercise.

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

g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.2.30 Lancaster County, Conoy Township Back-Up Route Alerting

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

g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.2.31 Lancaster County, East Donegal Township Emergency Operation Center

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

### 3.3.2.32 Lancaster County, East Donegal Township Back-up Route Alerting

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

### 3.3.2.33 Lancaster County, Elizabethtown Borough/West Donegal Township/Mount Joy Township Emergency Operations Center

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

### 3.3.2.34 Lancaster County, Elizabethtown Borough Traffic and Access Control

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

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

### 3.3.2.35 Lancaster County, Susquehanna Regional Police Department Traffic and Access Control

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

### 3.3.2.36 Lebanon County Emergency Operations Center

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

### 3.3.2.37 Lebanon County Emergency Worker Monitoring and Decontamination Station, Annville Union Hose Fire Department

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

ISSUE NO.: 64-11-1e1-A-03

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

CONDITION: There was no evidence that the Bicron Surveyor 2000 and Ludlum Model 2241-2 contamination survey instruments had a source check "range of

readings" acceptance criteria to ensure instrument operability (either affixed to the instrument or available by other means).

POSSIBLE CAUSE: A 1 microcurie Cesium 137 source was available to check handheld survey instruments' operability; however no acceptance criteria was available to determine if the instrument responded properly to the radioactive check source. The licensee controller indicated that instruments were being calibrated by a new provider. If the calibration provider is responsible for determining the source check range, they may not be aware of this responsibility. If it is not the calibration facility's responsibility then the County should determine these ranges after receipt back from calibration and identify the ranges on each instrument along with the source to be used.

REFERENCE: NUREG-0654, H.10; Lebanon County Emergency Operations Plan, Annex E, Appendix 13, Radiological Exposure Control (ESF 10), December 2008; ANSI N323A, 1997, American National Standard Radiation Protection Instrumentation Test and Calibration, Portable Survey Instruments, Section 4.8, Source Response Check

EFFECT: If the instrument does not appropriately respond to predetermined value when using a specific source, the user cannot be ensured that the instrument measures contamination properly. If the instrument under responds, an emergency worker or their equipment may be incorrectly released as clean (free from contamination).

CORRECTIVE ACTION DEMONSTRATED: Lebanon County successfully re-demonstrated this ARCA by providing the required information on the hand-held radiological instruments. The stickers and hand-held radiological instruments were photographed and sent to FEMA.

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

### 3.3.2.38 Lebanon County Reception Center, Lebanon County Career and Technological Center

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

### 3.3.2.39 Lebanon County Monitoring and Decontamination Center, Lebanon County Career and Technological Center

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

ISSUE NO.: 64-11-1e1-A-04

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

CONDITION: The hand-held radiological instruments issued to radiation monitoring personnel at the Lebanon County Monitoring and Decontamination Center were not provided with stickers or other information showing the acceptable range of instrument response during pre-use source checks.

POSSIBLE CAUSE: The director of the Lebanon County Monitoring and Decontamination Center stated that stickers had been applied to instruments in the past to provide this information but the stickers were removed by the calibration laboratory and were not replaced when the units were calibrated.

REFERENCE: NUREG-0654, Section II.H Emergency Facilities and Equipment

EFFECT: Radiation monitors performing pre-use operational checks of the instruments were not able to verify that the instruments were responding within an acceptable range of values.

CORRECTIVE ACTION DEMONSTRATED: Lebanon County successfully re-demonstrated this ARCA by providing the required information on the hand-held radiological instruments. The stickers and hand-held radiological instruments were photographed and sent to FEMA.

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

**3.3.2.40 Lebanon County Mass Care Center, Northern Lebanon High School**

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

**3.3.2.41 Lebanon County, South Londonderry Township Emergency Operations Center**

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

**3.3.2.42 Lebanon County, South Londonderry Township, Back-Up Route Alerting**

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 5.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: 5.a.3.

ISSUE NO.: 64-11-5a3-A-05

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

CONDITION: The criterion requires Backup Route Alerting to be completed in 45 minutes; however, the evaluated Route Alert Team completed the route in 49 minutes.

POSSIBLE CAUSE: The Radiological Briefing, issuance of dosimetry and KI, and completion of the "Dosimetry/KI Form" for all emergency workers caused a delay of 10 – 12 minutes in dispatching the Route Alert Team. The evaluated route alert team, which also drove the longest alert route, was not processed first.

REFERENCE: NUREG 0654, E.6, J.10.c. S. Londonderry Twp RERP, Appendix 33.B.2.c

EFFECT: Residents in the coverage area of the failed siren were not notified in a timely manner.

CORRECTIVE ACTION DEMONSTRATED: During a re-demonstration drill on May 9, 2001 the South Londonderry Township Backup Route Alert successfully redemonstrated this criterion.

During a re-demonstration exercise the South Londonderry Township Emergency Operations Center was notified via controller inject of an Alert at Three Mile Island Nuclear Generating Station. The S. Londonderry Township Emergency Management Coordinator (EMC) notified the Route Alerting Teams at Lawn Fire Department to prepare for possible Route Alerting. The Radiological Officer at Lawn Fire Department organized the Route Alerting Teams and conducted a thorough radiological briefing to include issuance of dosimetry and Potassium Iodide (KI) utilizing the appropriate Dosimetry/KI issue form. The exercise escalated to a Site Area Emergency (SAE) at 1928 hours along with a notification of sounding of the

sirens at 1943 hours. Upon identification of a failed siren #201, the Lawn Fire Department Route Alerting Team identified and began the appropriate route, and completed Back-up Route Alerting in 25 minutes. The Route Alerting Team made appropriate announcements throughout their route and reported one dosimeter reading via radio to the Radiological Officer.

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

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

**3.3.2.43 Lebanon County, South Londonderry Township Traffic and Access Control**

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

**3.3.2.44 York County Emergency Operation Center**

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

### 3.3.2.45 York County Emergency Worker Monitoring and Decontamination Station, Monaghan Fire Department

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

### 3.3.2.46 York County Reception Center, Southern School Complex

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

### 3.3.2.47 York County Monitoring and Decontamination Center, Southern School Complex High School

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

### 3.3.2.48 York County Mass Care Center, Southern School Complex

a. MET: 1.e.1, 6.a.1, 6.c.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: None
e. NOT DEMONSTRATED: None

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

### 3.3.2.49 York County, Dover Township Emergency Operations Center

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

### 3.3.2.50 York County, Lewisbury Borough/Newberry Township Emergency Operations Center

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.c.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 5.a.1, 5.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: 3.a.1, 5.a.3.

ISSUE NO.: 64-11-3a1-A-06

CRITERION: OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers IAW plans and procedures. Emergency workers periodically and at the end of each mission read and record dosimeter reading. (NUREG-0654, K.3)

CONDITION: The radiation briefing provided for the back-up route alerting team was not understood and included extraneous information.

POSSIBLE CAUSE: A team assigned for the back-up route alerting mission provided with a radiation briefing contained on a DVD that included information that was not appropriate to the Newberry site, such as: use of electronic dosimeters and trigger dosimeter chargers. Interviews with team members showed that they did not understand the 5 rem limit for emergency workers.

REFERENCE: NUREG-0654, K.3

EFFECT: Emergency workers performing the route alerting could have received an

excessive radiation dose.

CORRECTIVE ACTION DEMONSTRATED: The team returned to the EOC, was provided with a revised radiation briefing and interviews with team members showed an adequate understanding of the dose limit for radiation workers.

ISSUE NO.: 64-11-5a3-A-07

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

CONDITION: Backup Route Alerting for siren #533 was not completed within the required 45 minutes.

POSSIBLE CAUSE: A team assigned for the mission was called to an actual emergency. The back-up team was late arriving at the EOC and the radiation briefing was too long – leaving too little time to perform the mission in the allotted time.

REFERENCE: NUREG-0654, E.6, Appendix 3.B.2.c

EFFECT: Personnel living in the area of siren #533 would not have been notified of a nuclear emergency in a timely manner.

CORRECTIVE ACTION DEMONSTRATED: The team returned to the EOC, was provided with a revised radiation briefing and re-covered the route in approximately 30 minutes.

c. DEFICIENCY: None
d. PLAN ISSUES: None

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

### 3.3.2.51 York County, Newberry Township Back-up Route Alerting

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

### 3.3.2.52 York County, Manchester Township Emergency Operations Center

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

### 3.3.2.53 York County, Northeast Area Emergency Operations Center (Mount Wolf, Manchester Borough, E Manchester Township)

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

### 3.3.2.54 Franklin County Mass Care Center, Faust Junior High School

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

### 3.3.2.55 Dauphin County, Capital Area Intermediate Unit, Administration Building

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

### 3.3.2.56 Dauphin County, Capital Area Intermediate Unit, Capital Area School for the Arts

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

### 3.3.2.57 Dauphin County, Central Dauphin School District

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

### 3.3.2.58 Dauphin County, Central Dauphin School District, Central Dauphin East High School

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

### 3.3.2.59 Dauphin County, Central Dauphin School District, Swatara Middle School

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

### 3.3.2.60 Dauphin County, Central Dauphin School District, Tri Community Elementary School

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

### 3.3.2.61 Dauphin County, Derry Township School District

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

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

### 3.3.2.62 Dauphin County, Derry Township School District, Hershey Intermediate Elementary School

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

### 3.3.2.63 Dauphin County, Derry Township School District, Hershey Middle School

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

### 3.3.2.64 Dauphin County, Harrisburg School District

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

### 3.3.2.65 Dauphin County, Harrisburg School District, Harrisburg High School

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

### 3.3.2.66 Dauphin County, Harrisburg School District, Scott School

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

### 3.3.2.67 Dauphin County, Harrisburg School District, Shimmell School

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

ISSUE NO.: 64-11-3c2-P-02

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

CONDITION: The Harrisburg City School District Radiological Protection Plan does not reflect the procedures in the Shimmel School Plan.

The Shimmel School is outside the 10-mile emergency planning zone (EPZ), and has about 35 students living inside the EPZ. The school has two student populations with special requirements. Due to the sensitive nature of the two groups the principal developed four emergency classification responses. The school plan identifies an

incident at the Three Mile Island Nuclear Generating Station as a Code Red. A Code Red calls for evacuating the entire student population to the Rowlen Middle School gym, located about 2-3 blocks from the Shimmel School. The parents would be notified to pick up their students from there. The School District plan states that only the students living in the EPZ will be dismissed and picked up by their parents and the rest of the students will be dismissed as usual.

POSSIBLE CAUSE: The Harrisburg City School District Plan has not been updated to reflect the procedures in the Shimmel School Plan.

REFERENCE: NUREG-0654, J.10.c, d, g; Harrisburg City School District ALL HAZARDS School Safety Plan, Section 7 – Radiological Emergency Response Plan, Appendix 7-5.6.

EFFECT: Personnel at the Harrisburg City School District offices would not be able to give parents the correct information on where to pick up their children that attend the Shimmel School.

CORRECTIVE ACTION DEMONSTRATED: The Pennslyvania Emergency Management Agency has provided an official letter of notification to FEMA of the Shimmell School's closure, therefore the planning issue assessed at this location is administratively closed.

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

**3.3.2.68 Dauphin County, Lower Dauphin School District**

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

### 3.3.2.69 Dauphin County, Lower Dauphin School District, Lower Dauphin High School

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

### 3.3.2.70 Dauphin County, Lower Dauphin School District, Price Building

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

### 3.3.2.71 Dauphin County, Lower Dauphin School Distirct, South Hanover Elementary School

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

### 3.3.2.72 Dauphin County, Middletown Area School District

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

g. PRIOR ISSUES - UNRESOLVED: None

### 3.3.2.73 Dauphin County, Middletown Area School District, Middletown High School

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

### 3.3.2.74 Dauphin County, Milton Hershey School

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

### 3.3.2.75 Dauphin County, Steelton-Highspire School District

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

### 3.3.2.76 Dauphin County, Steelton-Highspire School District, Steelton-Highspire High School

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

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

### 3.3.2.77 Lancaster County, Donegal School District

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

### 3.3.2.78 Lancaster County, Donegal School District, Donegal High School

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

### 3.3.2.79 Lancaster County, Donegal School District, Donegal Springs Elementary School

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

### 3.3.2.80 Lancaster County, Elizabethtown Area School District

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

### 3.3.2.81 Lancaster County, Elizabethtow Area School District, East High Street Elememetary School

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

### 3.3.2.82 Lancaster County, Elizabethtown Area School District, Fairview Elementary School

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

### 3.3.2.83 Lancaster County, Elezabethtown Aera School District, Mill Road Elementary School

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

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

### 3.3.2.84 Lebanon County, Palmyra Area School District

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

### 3.3.2.85 Lebanon County, Palmyra Area School District, Palmyra High School

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

### 3.3.2.86 York County, Central York School District

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

### 3.3.2.87 York County, Central York School District, Central York Middle School

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

### 3.3.2.88 York County, Central York School District, Hayshire Elementary School

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

### 3.3.2.89 York County, Central York School District, Roundtown Elementary School

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

### 3.3.2.90 York County, Dover Area School Distriict

a. MET: 3.c.2.
b. AREAS REQUIRING CORRECTIVE ACTION: 3.c.2.

ISSUE NO.: 64-11-3c2-A-08

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

CONDITION: The Dover Area School District Assistant Superintendent, acting on behalf of the Superintendent, did not order the dismissal of all non-EPZ students and the transfer of EPZ students to North Salem Elementary School when an evacuation was ordered by the Governor, as required by the Dover Area School District Three Mile Island Evacuation Plan (03/07/11), Section VI.D, Concept of Operations, General Emergency.

POSSIBLE CAUSE: The Dover Area School District Three Mile Island Evacuation Plan (03/07/11), Section VI, Concept of Operations, states that the Superintendent will order the dismissal of all non-EPZ students and the transfer of EPZ students to North Salem Elementary School, but checklists in the plan do not include steps to initiate an early dismissal.

REFERENCE: Dover Area School District Three Mile Island Evacuation Plan (03/07/11), Section VI.D (03/07/11); NUREG-0654, J.10.g, page 9.

EFFECT: There may have been some confusion at the individual schools as to if an early dismissal and transfer of students was going to happen.

CORRECTIVE ACTION DEMONSTRATED: On April 29, 2011, Dover Area School District demonstrated the necessary actions to fulfill this criterion during a re-demonstration of the Three Mile Island Nuclear Generating Station out-of-sequence schools exercise.

During this re-demonstration, the Dover School District Safety Officer, acting on behalf of the Dover School District Superintendent demonstrated the early dismissal of all non-EPZ students and transfer of EPZ students to North Salem Elementary School when an evacuation was ordered by the Governor. This re-demonstration was conducted via phone calls generated from the York County Department of Emergency Services to the Dover Area School District Administrative Office. The exercise began at Site Area Emergency at approximately 0915 hours, followed by General Emergency at 0934 and an ordered evacuation at 0945 hours. An updated call down list was utilized to notify the Dover School District schools of the early dismissal decision including the High School, Intermediate School, and notification

to North Salem Elementary School of the transfer of EPZ students. An updated evacuation plan dated 4/13/2011 was also provided with highlighted changes. The exercise demonstration was completed at 1120 hours.

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

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

**3.3.2.91 York County, Dover Area School District, Dover Intermediate School**

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

**3.3.2.92 York County, Eastern York School District**

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

### 3.3.2.93 York County, Eastern York School District, Kreutz Creek Elementary School

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

### 3.3.2.94 York County, Northeastern School District

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

### 3.3.2.95 York County, Northeastern School District, Northeastern Middle School

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

### 3.3.2.96 York County, Northeastern School District, Shallow Brook Intermediate School,

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

### 3.3.2.97 York County, Northeastern School District, Spring Forge Intermediate School

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

### 3.3.2.98 York County, Northeastern School District, York Haven Elementary School

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

### 3.3.2.99 York County, West Shore School District

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

### 3.3.2.100 York County, West Shore School District, Allen Middle School

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

### 3.3.2.101 York County, West Shore School District, Cedar Cliff High School

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

### 3.3.2.102 York County, West Shore School District, Highland Elementary School

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

### 3.3.2.103 York County, West Shore School District, New Cumberland Middle School

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

### 3.3.2.104 York County, West Shore School District, Red Mill Elementary School

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

### 3.3.2.105 Lebanon County, Eastern Lebanon High School Complex

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

### 3.3.3 Support Jurisdictions

### 3.3.3.1 Cumberland County Mass Care Center, Big Spring High School

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

### 3.3.3.2 Lancaster County Mass Care Center, Manheim Township High School

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

### 3.3.3.3 Adams County Emergency Operations Center

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

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

### 3.3.3.4 Franklin County Emergency Operations Center

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

### 3.3.3.5 Franklin County Reception Center, Faust Junior High School

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

### 3.3.3.6 Franklin County Monitoring and Decontamination Center, Faust Junior High School

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

### 3.3.3.7 Schuylkill County Emergency Operations Center

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

### 3.3.3.8 Schuylkill County Reception Center, Blue Mountain High School

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

### 3.3.3.9 Schuylkill County Monitoring and Decontamination Center, Blue Mountain High School

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

ISSUE NO.: 64-11-6a1-A-09

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

CONDITION: The space set up for hand frisking and initial decontamination of a person that alarmed the portal monitor twice was near the portal monitor, approximately 5 to 6 feet away.

POSSIBLE CAUSE: The set up team for the area did not take into account the distance necessary to ensure the portal monitor would not be affected by nearby

contaminated individuals.

REFERENCE: NUREG- 0654, K.5.b; Schulykill County Emergency Management Agency Nuclear/Radiological Incident Plan to the County Emergency Operations Plan, Annex A for Nuclear Power Plant Incidents March 1994, A.4, Section 1.A.3, page 1 of 45.

EFFECT: The portal monitor could give false indications of contamination when non contaminated individuals pass through.

CORRECTIVE ACTION DEMONSTRATED: The PEMA observer and controller were made aware of the situation and informed the monitoring team that a relocation of the hand frisking operation was necessary. The monitoring of contaminated individuals was re-located closer to the decontamination shower facility and this provided the necessary space to line up additional contaminated individuals without interfering with the portal monitor operation.

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

**3.3.3.10 Schuylkill County Mass Care Center, Blue Mountain High School**

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

### 3.3.4 Private Organizations

#### 3.3.4.1 Exelon Joint Information Center

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

# SECTION 4: CONCLUSION

Based on the review of the offsite radiological emergency response plans and procedures submitted, FEMA Region III has determined they are adequate and there is a reasonable assurance they can be implemented, as demonstrated during the 2011 Three Mile Island Plume Exercise.

# APPENDIX A: EXERCISE TIMELINE

The tables on the following pages present the times at which key events and activities occured during the TMI exercise on April 12, 2011. Also included are times notifications were made to the participating jurisdictions and functional entities.

Table 1 - Exercise Timeline
DATE: 2011-04-12, SITE: Three Mile Island Nuclear Generating Station, PA

| Emergency Classification Level or Event | Time Utility Declared | PA EOC | EJIC | PA AAC SEOC-BRP | CuCo EOC | CuCo NCmbrBr EOC | DaCo EOC |
|---|---|---|---|---|---|---|---|
| Unusual Event | | | | | | | |
| Alert | 1712 | 1724 | 1733 | 1726 | 1724 | 1735 | 1724 |
| Site Area Emergency | 1840 | 1848 | 1857 | 1854 | 1854 | 1903 | 1848 |
| General Emergency | 2007 | 2016 | 2018 | 2023 | 2024 | | 2016 |
| Simulated Rad. Release Started | 1834 | 1733 | 1733 | 1712 | 1724 | 1735 | 1722 |
| Simulated Rad. Release Terminated | 1840 | 1848 | | | | 1900 | 1848 |
| Facility Declared Operational | | 1833 | 1848 | 1700 | 1724 | 1754 | 1745 |
| Declaration of State of Emergency | | 1844 | 1857 | 1844 | 1858 | 1853 | 1900 |
| Exercise Terminated | | 2200 | 2200 | 2200 | 2201 | 2200 | 2202 |
| Early Precautionary Actions: | | | 2010 | 1905 | 1934 | 1939 | 1935 |
| 1st Protective Action Decision: | | | 1944 | | 1912 | 1920 | 1910 |
| 1st Siren Activation | | 1920 | | | 1920 | | 1920 |
| 1st EAS or EBS Message | | 1923 | | | 1923 | | 1923 |
| 2nd Protective Action Decision: | | | | | 2054 | 2056 | 2054 |
| 2nd Siren Activation | | 2104 | | | 2104 | | 2104 |
| 2nd EAS or EBS Message | | 2107 | | | 2107 | | 2107 |
| 3rd Protective Action Decision: | | | | | | | |
| 3rd Siren Activation | | | | | | | |
| 3rd EAS or EBS Message | | | | | | | |
| 4th Protective Action Decision: | | | | | | | |
| 4th Siren Activation | | | | | | | |
| 4th EAS or EBS Message | | | | | | | |
| 5th Protective Action Decision: | | | | | | | |
| 5th Siren Activation | | | | | | | |
| 5th EAS or EBS Message | | | | | | | |
| 6th Protective Action Decision: | | | | | | | |
| 6th Siren Activation | | | | | | | |
| 6th EAS or EBS Message | | | | | | | |
| KI Administration Decision: | | 2041 | 2041 | 2041 | 2045 | 2054 | 2049 |

## Table 1 - Exercise Timeline

## DATE: 2011-04-12, SITE: Three Mile Island Nuclear Generating Station, PA

| Emergency Classification Level or Event | Time Utility Declared | DaCo HbgCty EOC | DaCo HisprBr EOC | DaCo Lndndry Twp EOC | DaCo PxtngBr EOC | DaCo LwrPxtnTwp EOC | DaCo SoHnvr Twp EOC |
|---|---|---|---|---|---|---|---|
| Unusual Event | | | | | | | |
| Alert | 1712 | 1725 | 1727 | 1725 | 1730 | 1730 | 1729 |
| Site Area Emergency | 1840 | 1900 | 1858 | 1901 | 1858 | 1900 | 1910 |
| General Emergency | 2007 | 2034 | 2028 | 2027 | 2025 | 2026 | 2027 |
| Simulated Rad. Release Started | 1834 | 1725 | 1727 | 1725 | 1730 | 1730 | 1729 |
| Simulated Rad. Release Terminated | 1840 | 1900 | 1858 | 1901 | 1858 | 1900 | 1910 |
| Facility Declared Operational | | 1805 | 1745 | 1757 | 1815 | 1803 | 1747 |
| Declaration of State of Emergency | | 1910 | 1852 | 2005 | 2009 | 1920 | 1910 |
| Exercise Terminated | | 2155 | 2204 | 2054 | 2145 | 2206 | 2105 |
| Early Precautionary Actions: | | | 1923 | | | | |
| 1st Protective Action Decision: | | 1920 | | 1919 | 1923 | 1914 | 1915 |
| 1st Siren Activation | | | | | | | |
| 1st EAS or EBS Message | | | | | | | |
| 2nd Protective Action Decision: | | 2058 | 2058 | 2058 | 2058 | 2058 | 2100 |
| 2nd Siren Activation | | | | | | | |
| 2nd EAS or EBS Message | | | | | | | |
| 3rd Protective Action Decision: | | | | | | | |
| 3rd Siren Activation | | | | | | | |
| 3rd EAS or EBS Message | | | | | | | |
| 4th Protective Action Decision: | | | | | | | |
| 4th Siren Activation | | | | | | | |
| 4th EAS or EBS Message | | | | | | | |
| 5th Protective Action Decision: | | | | | | | |
| 5th Siren Activation | | | | | | | |
| 5th EAS or EBS Message | | | | | | | |
| 6th Protective Action Decision: | | | | | | | |
| 6th Siren Activation | | | | | | | |
| 6th EAS or EBS Message | | | | | | | |
| KI Administration Decision: | | 2058 | 2057 | 2054 | 2053 | 2054 | 2100 |

## Table 1 - Exercise Timeline

### DATE: 2011-04-12, SITE: Three Mile Island Nuclear Generating Station, PA

| Emergency Classification Level or Event | Time Utility Declared | LaCo EOC | LeCo EOC | LeCo SLTwp EOC | YC EOC | YC DyrTwp EOC | YC LBNT EOC |
|---|---|---|---|---|---|---|---|
| Unusual Event | | | | | | | |
| Alert | 1712 | 1725 | 1725 | 1917 | 1738 | 1741 | 1741 |
| Site Area Emergency | 1840 | 1847 | 1848 | 2035 | 1903 | 1907 | 1907 |
| General Emergency | 2007 | 2012 | 2030 | 1929 | 2031 | 2032 | 2034 |
| Simulated Rad. Release Started | 1834 | 1720 | 1848 | | 1722 | 1712 | 1712 |
| Simulated Rad. Release Terminated | 1840 | 1840 | | | 1858 | 1840 | 1840 |
| Facility Declared Operational | | 1745 | 1740 | 1756 | 1744 | 1753 | 1818 |
| Declaration of State of Emergency | | 1846 | 1841 | 1825 | 1808 | 1905 | 1948 |
| Exercise Terminated | | 2200 | 2200 | 2135 | 2200 | 2148 | 2200 |
| Early Precautionary Actions: | | 1930 | 1931 | 1915 | 1910 | | |
| 1st Protective Action Decision: | | 1905 | 1848 | 1920 | 1910 | 2032 | 1915 |
| 1st Siren Activation | | 1920 | 1920 | | 1920 | | |
| 1st EAS or EBS Message | | 1923 | 1923 | | 1923 | | |
| 2nd Protective Action Decision: | | 2054 | 2058 | 2110 | 2054 | 2107 | 2107 |
| 2nd Siren Activation | | 2104 | 2104 | | 2104 | | |
| 2nd EAS or EBS Message | | 2107 | 2107 | | 2107 | | |
| 3rd Protective Action Decision: | | | | | | | |
| 3rd Siren Activation | | | | | | | |
| 3rd EAS or EBS Message | | | | | | | |
| 4th Protective Action Decision: | | | | | | | |
| 4th Siren Activation | | | | | | | |
| 4th EAS or EBS Message | | | | | | | |
| 5th Protective Action Decision: | | | | | | | |
| 5th Siren Activation | | | | | | | |
| 5th EAS or EBS Message | | | | | | | |
| 6th Protective Action Decision: | | | | | | | |
| 6th Siren Activation | | | | | | | |
| 6th EAS or EBS Message | | | | | | | |
| KI Administration Decision: | | 2118 | 2044 | 2044 | 2107 | 2109 | 2105 |

## Table 1 - Exercise Timeline

### DATE: 2011-04-12, SITE: Three Mile Island Nuclear Generating Station, PA

| Emergency Classification Level or Event | Time Utility Declared | YC MnchstrTwp EOC | YC NEA EOC | AdCo EOC (S) | FrCo EOC (S) | ScCo EOC (S) |
|---|---|---|---|---|---|---|
| Unusual Event | | | | | | |
| Alert | 1712 | 1745 | 1744 | 1741 | 1740 | 1746 |
| Site Area Emergency | 1840 | 1912 | 1908 | 1902 | 1904 | 1902 |
| General Emergency | 2007 | 2035 | 2033 | 2032 | 2032 | 2031 |
| Simulated Rad. Release Started | 1834 | 1712 | 1712 | 1712 | 1740 | 1740 |
| Simulated Rad. Release Terminated | 1840 | 1840 | 1840 | 1726 | 1726 | 1726 |
| Facility Declared Operational | | 1810 | 1800 | 1754 | 1745 | 1812 |
| Declaration of State of Emergency | | 2008 | 1855 | 1844 | 1844 | 1850 |
| Exercise Terminated | | 2124 | 2130 | 2200 | 2151 | 2200 |
| Early Precautionary Actions: | | | | 1915 | 1910 | 1932 |
| 1st Protective Action Decision: | | 1915 | 1920 | 1920 | 1920 | 1920 |
| 1st Siren Activation | | | | | | |
| 1st EAS or EBS Message | | | | | | |
| 2nd Protective Action Decision: | | 2107 | 2056 | 2104 | 2104 | 2054 |
| 2nd Siren Activation | | | | | | |
| 2nd EAS or EBS Message | | | | | | |
| 3rd Protective Action Decision: | | | | | | |
| 3rd Siren Activation | | | | | | |
| 3rd EAS or EBS Message | | | | | | |
| 4th Protective Action Decision: | | | | | | |
| 4th Siren Activation | | | | | | |
| 4th EAS or EBS Message | | | | | | |
| 5th Protective Action Decision: | | | | | | |
| 5th Siren Activation | | | | | | |
| 5th EAS or EBS Message | | | | | | |
| 6th Protective Action Decision: | | | | | | |
| 6th Siren Activation | | | | | | |
| 6th EAS or EBS Message | | | | | | |
| KI Administration Decision: | | 2100 | 2056 | 2039 | 2038 | 2054 |

# APPENDIX B: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Evaluators and Team Leaders for the TMI 2011 Plume Exercise evaluated on April 12 and 13, 2011. The following consitutes the managing staff for the Exercise Evaluation:

Darrell Hammons, DHS, Radiological Assistance Committee Chairman
Matthew Wiedemer, DHS, Exercise Evaluation Program Manager and Site Specialist
John Price, DHS, Team Leader, Pennsylvania Emergency Operations Center
Richard Kinard, DHS, Team Leader, Dauphin County Emergency Operations Center
Martin Vyenielo, DHS, Team Leader, Techinical Evaluations
Bob Neff, DHS, Team Leader, Lancaster County Emergency Operations Center
Bart Freeman, DHS, Team Leader, Lebanon County Emergency Operations Center
Michael Shuler, DHS, Team Leader, Cumberland County Emergency Operations Center
Tina Thomas, DHS, Team Leader, Adams County Emergency Operations Center
Dan Lerch, DHS, Team Leader, Franklin County Emergency Operations Center
John Price, DHS, Team Leader, Schuylkill County Emergency Operations Center
James McClahahan, ICF, Team Leader, Schools
Joe Suders. DHS, Team Leader, York County Emergency Operations Center

## DATE: 2011-04-12, SITE: Three Mile Island Nuclear Generating Station, PA

| LOCATION | EVALUATOR | AGENCY |
|---|---|---|
| Pennsylvania Emergency Operations Center | Richard Barkley<br>William Palmer<br>Chris Thompson | Nuclear Regulatory Commission, Region I<br>ICF<br>FAA |
| Pennsylvania Joint Information Center | David White | ICF |
| Pennsylvania Accident Assessment Center, State Emergency Operations Center-Bureau of Radiation Protection | Reggie Rodgers<br>*Martin Vyenielo | ICF<br>FEMA RIII |
| Pennsylvania State Traffic and Access Control Points, State Police Barracks Harrisburg | Richard Smith | ICF |
| Cumberland County Emergency Operations Center | Harry Nash<br>Rosemary Samsel<br>*Michael Shuler<br>Miriam Weston | FEMA REP HQ<br>ICF<br>FEMA RIII<br>FEMA RII |
| Cumberland County Emergency Worker Monitoring and Decontamination Station, West Shore Fire Station #2, Lemoyne | Lawrence Visniesky | ICF |
| Cumberland County Reception Center, Big Spring High School | Tracey Green | ICF |
| Cumberland County Monitoring and Decontamination Center, Big Spring High School | Tracey Green | ICF |
| Cumberland County, New Cumberland Borough Emergency Operations Center | Michael Burriss<br>William O'Brien | ICF<br>ICF |
| Cumberland County, New Cumberland Borough Back-up Route Alerting | William O'Brien | ICF |
| Dauphin County Emergency Operations Center | Bridget Ahlgrim<br>James Hickey<br>*Richard Kinard<br>John Rice | FEMA HQ<br>ICF<br>FEMA RIII<br>FEMA R1 |
| Dauphin County Emergency Worker Monitoring and Decontamination Station, Harrisburg Area Community College | Reggie Rodgers | ICF |
| Dauphin County Mass Care Center, Lenkerville Elementary School | Carl Wentzell | ICF |
| Dauphin County Mass Care Center, Halifax Area High School | John Wills | ICF |
| Dauphin County, Harrisburg City Emergency Operations Center | Frank Cordaro | ICF |
| Dauphin County, Highspire Borough Emergency Operations Center | Mark Dalton<br>Robert Jeffries | ICF<br>ICF |
| Dauphin County, Highspire Back-up Route Alerting | Robert Jeffries | ICF |
| Dauphin County, Londonderry Township Emergency Operations Center | Steve Denson | ICF |
| Dauphin County, Paxtang Borough Emergency Operations Center | DeeEll Fifield | ICF |
| Dauphin County, LowerPaxton Township Emergency Operations Center | Clark Duffy | ICF |
| Dauphin County, South Hanover Township Emergency Operations Center | Robert Vork | ICF |
| Lancaster County Emergency Operations Center | *Robert Neff | FEMA RIII |
| Lancaster County Emergency Worker Monitoring and Decontamination Station, Mount Joy Fire Department | Alan Bevan | ICF |
| Lancaster County Mass Care Center Conestoga Valley High School | *Joseph Suders | FEMA RIII |
| Lancaster County Mass Care Center, Conestoga Valley Middle School | *Joseph Suders | FEMA RIII |
| Lancaster County Reception Center, Park City Mall | Michael Burns | ICF |

| | | |
|---|---|---|
| Lancaster County Monitoring and Decontamination Center, Manheim Township School Complex | Samuel Nelson | ICF |
| Lancaster County Mass Care Center ,Cocalico Middle School | Joseph Suders | FEMA RIII |
| Lancaster County, Cocalico High School,Mass Care Center | Joseph Suders | FEMA RIII |
| Lancaster County Mass Care Center, Manheim Township Middle School | Samuel Nelson | ICF |
| Lancaster County Mass Care Center , Warwick High School | *Robert Neff | FEMA RIII |
| Lancaster County Mass Care Center, Warwick Middle School | *Robert Neff | FEMA RIII |
| Lancaster County, Conoy Township Emergency Operations Center | Marcy Campbell | ICF |
| Lancaster County, Conoy Township Back-Up Route Alerting | Marcy Campbell | ICF |
| Lancaster County, East Donegal Township Emergency Operation Center | Thomas Gahan<br>Michael Petullo | ICF<br>ICF |
| Lancaster County, East Donegal Township Back-up Route Alerting | Michael Petullo | ICF |
| Lancaster County, Elizabethtown Borough/West Donegal Township/Mount Joy Township Emergency Operations Center | Robert Duggleby<br>Danny Loomis | ICF<br>ICF |
| Lancaster County, Elizabethtown Borough Traffic and Access Control | Stephen Watts | ICF |
| Lancaster County, Susquehanna Regional Police Department Traffic and Access Control | Meg Swearingen | ICF |
| Lebanon County Emergency Operations Center | Jon Christiansen<br>Lashawn Halsey<br>Daniel Lerch | ICF<br>FEMA HQ<br>FEMA RIII |
| Lebanon County Emergency Worker Monitoring and Decontamination Station, Annville Union Hose Fire Department | Marcy Campbell<br>David Petta | ICF<br>ICF |
| Lebanon County Reception Center, Lebanon County Career and Technological Center | Earl Shollenberger | ICF |
| Lebanon County Monitoring and Decontamination Center, Lebanon County Career and Technological Center | Earl Shollenberger | ICF |
| Lebanon County Mass Care Center, Northern Lebanon High School | Richard McPeak | ICF |
| Lebanon County, South Londonderry Township Emergency Operations Center | James Greer<br>Bart Ray | ICF<br>ICF |
| Lebanon County, South Londonderry Township, Back-Up Route Alerting | Bart Ray | ICF |
| Lebanon County, South Londonderry Township Traffic and Access Control | David Stuenkel | ICF |
| York County Emergency Operation Center | Eric Carter<br>Tina Lai Thomas<br>Kent Tosch | ICF<br>FEMA RIII<br>ICF |
| York County Emergency Worker Monitoring and Decontamination Station, Monaghan Fire Department | Ronald Biernacki | ICF |
| York County Reception Center, Southern School Complex | Bruce Swiren | ICF |
| York County Monitoring and Decontamination Center, Southern School Complex High School | Bruce Swiren | ICF |
| York County Mass Care Center, Southern School Complex | Bruce Swiren | ICF |
| York County, Dover Township Emergency Operations Center | David Kayen | ICF |
| York County, Lewisbury Borough/Newberry Township Emergency Operations Center | Roger Jobe<br>H. Wes Ryals | ICF<br>ICF |
| York County, Newberry Township Back-up Route Alerting | H. Wes Ryals | ICF |
| York County, Manchester Township Emergency Operations Center | Larry Broockerd | FEMA HQ |
| York County, Northeast Area Emergency Operations Center (Mount Wolf, Manchester Borough, E Manchester Township) | John Flynn | ICF |
| Franklin County Mass Care Center, Faust Junior High School | Kenneth Wierman | FEMA HQ |

| | | |
|---|---|---|
| Dauphin County, Capital Area Intermediate Unit, Administration Building | Earl Shollenberger | ICF |
| Dauphin County, Capital Area Intermediate Unit, Capital Area School for the Arts | Earl Shollenberger | ICF |
| Dauphin County, Central Dauphin School District | William O'Brien | ICF |
| Dauphin County, Central Dauphin School District, Central Dauphin East High School | William O'Brien | ICF |
| Dauphin County, Central Dauphin School District, Swatara Middle School | Robert Jeffries | ICF |
| Dauphin County, Central Dauphin School District, Tri Community Elementary School | David Petta | ICF |
| Dauphin County, Derry Township School District | Richard Smith | ICF |
| Dauphin County, Derry Township School District, Hershey Intermediate Elementary School | Richard Smith | ICF |
| Dauphin County, Derry Township School District, Hershey Middle School | Carl Wentzell | ICF |
| Dauphin County, Harrisburg School District | Samuel Nelson | ICF |
| Dauphin County, Harrisburg School District, Harrisburg High School | Samuel Nelson | ICF |
| Dauphin County, Harrisburg School District, Scott School | Ronald Biernacki | ICF |
| Dauphin County, Harrisburg School District, Shimmell School | Rosemary Samsel | ICF |
| Dauphin County, Lower Dauphin School District | Kenneth Wierman | FEMA HQ |
| Dauphin County, Lower Dauphin School District, Lower Dauphin High School | Kenneth Wierman | FEMA HQ |
| Dauphin County, Lower Dauphin School District, Price Building | John Wills | ICF |
| Dauphin County, Lower Dauphin School Distirct, South Hanover Elementary School | Richard McPeak | ICF |
| Dauphin County, Middletown Area School District | James Hickey | ICF |
| Dauphin County, Middletown Area School District, Middletown High School | James Hickey | ICF |
| Dauphin County, Milton Hershey School | Paul Nied | ICF |
| Dauphin County, Steelton-Highspire School District | Alan Bevan | ICF |
| Dauphin County, Steelton-Highspire School District, Steelton-Highspire High School | Alan Bevan | ICF |
| Lancaster County, Donegal School District | Michael Petullo | ICF |
| Lancaster County, Donegal School District, Donegal High School | Michael Petullo | ICF |
| Lancaster County, Donegal School District, Donegal Springs Elementary School | Tracey Green | ICF |
| Lancaster County, Elizabethtown Area School District | Stephen Watts | ICF |
| Lancaster County, Elizabethtow Area School District, East High Street Elememtary School | Kent Tosch | ICF |
| Lancaster County, Elizabethtown Area School District, Fairview Elementary School | Robert Black | ICF |
| Lancaster County, Elezabethtown Aera School District, Mill Road Elementary School | Stephen Watts | ICF |
| Lebanon County, Palmyra Area School District | Bart Ray | ICF |
| Lebanon County, Palmyra Area School District, Palmyra High School | Bart Ray | ICF |
| York County, Central York School District | H. Wes Ryals | ICF |
| York County, Central York School District, Central York Middle School | H. Wes Ryals | ICF |
| York County, Central York School District, Hayshire Elementary School | John Zeidler | ICF |

| | | |
|---|---|---|
| York County, Central York School District, Roundtown Elementary School | Bruce Swiren | ICF |
| York County, Dover Area School Distriict | David Stuenkel | ICF |
| York County, Dover Area School District, Dover Intermediate School | David Stuenkel | ICF |
| York County, Eastern York School District | David White | ICF |
| York County, Eastern York School District, Kreutz Creek Elementary School | David White | ICF |
| York County, Northeastern School District | Lawrence Visniesky | ICF |
| York County, Northeastern School District, Northeastern Middle School | Lawrence Visniesky | ICF |
| York County, Northeastern School District, Shallow Brook Intermediate School, | William Palmer | ICF |
| York County, Northeastern School District, Spring Forge Intermediate School | John Flynn | ICF |
| York County, Northeastern School District, York Haven Elementary School | Meg Swearingen | ICF |
| York County, West Shore School District | Lynn Steffensen | ICF |
| York County, West Shore School District, Allen Middle School | Eric Carter | ICF |
| York County, West Shore School District, Cedar Cliff High School | *Roger Kowieski | NTHMC |
| York County, West Shore School District, Highland Elementary School | Michael Burns | ICF |
| York County, West Shore School District, New Cumberland Middle School | James McClanahan | ICF |
| York County, West Shore School District, Red Mill Elementary School | Lynn Steffensen | ICF |
| Lebanon County, Eastern Lebanon High School Complex | *Joseph Suders | FEMA RIII |
| Cumberland County Mass Care Center, Big Spring High School | Tracey Green | ICF |
| Lancaster County Mass Care Center, Manheim Township High School | *Robert Neff | FEMA RIII |
| Adams County Emergency Operations Center | Barbara Thomas | FEMA R1 |
| Franklin County Emergency Operations Center | Taneeka Hollins | FEMA HQ |
| Franklin County Reception Center, Faust Junior High School | Kenneth Wierman | FEMA HQ |
| Franklin County Monitoring and Decontamination Center, Faust Junior High School | Kenneth Wierman | FEMA HQ |
| Schuylkill County Emergency Operations Center | Robert Black | ICF |
| Schuylkill County Reception Center, Blue Mountain High School | John Zeidler | ICF |
| Schuylkill County Monitoring and Decontamination Center, Blue Mountain High School | John Zeidler | ICF |
| Schuylkill County Mass Care Center, Blue Mountain High School | John Zeidler | ICF |
| Exelon Joint Information Center | Paul Nied | ICF |
| * Team Leader | | |

# APPENDIX C: ACRONYMS AND ABBREVIATIONS

| Acronym | Meaning |
|---|---|
| AAC | Accident Assessment Center |
| ACP | Access Control Points |
| AMS | Allen Middle School |
| ANS | Automated Notification System |
| ARC | American Red Cross |
| ARCA | Area Requiring Corrective Action |
| ARDS | Automatic Ring Down System |
| ARES | Amateur Radio Emergency Service |
| AS | Assistant Superintendent |
| CAD | Computer Aided Dispatch |
| CART | County Animal Response Team |
| CDMS | Central Dauphin Middle School |
| CDSD | Central Dauphin School District |
| CMT | Crisis Management Team |
| CSC | Customer Service Center |
| DCEMA | Dauphin County Emergency Management Agency |
| DCEOC | Dauphin County Emergency Operations Center |
| DEMD | Deputy Emergency Management Director |
| DRD | Direct Reading Dosimetry |
| EAL | Emergency Action Level |
| EAS | Emergency Alert System |
| ECC | Emergency Communications Center |
| ECL | Emergency Classification Level |
| EDACS | Emergency Direct Access Communications System |
| ELCMS | East Lebanon County Middle School |
| ELCSC | Eastern Lebanon County School Complex |
| EM | Emergency Manager |
| EMA | Emergency Management Agency |
| EMC | Emergency Management Coordinator |
| EMD | Emergency Management Director |
| EMS | Emergency Medical Service |
| EMSO | Emergency Medical Services Officer |
| EOC | Emergency Operations Center |
| EOF | Emergency Operations Facility |

| | |
|---|---|
| EOP | Emergency Operations Plan |
| EPA | Environmental Protection Agency |
| EPZ | Emergency Planning Zone |
| ERDS | Emergency Response Data System |
| ESF | Emergency Support Function |
| EW | Emergency Workers |
| EWEC | Emergency Worker Exposure Control |
| FD | Fire Department |
| FDMJ | Fire Department Mount Joy |
| FEMA | Federal Emergency Management Agency |
| FSO | Fire Services Officer |
| GE | GENERAL EMERGENCY |
| GIS | Geographic Information System |
| HACC | Harrisburg Area Community College |
| HF | High Frequency |
| HMC | Hershey Medical Center |
| HMT | Hazardous Materials Team |
| HPD | Highspire Police Department |
| IMAT | Incident Management Assistance Team |
| JIC | Joint Information Center |
| LC | Lebanon County |
| LCEMA | Lebanon County Emergency Management Agency |
| LCEOC | Lancaster County Emergency Operations Center |
| LCEOP | Lebanon County Emergency Operations Plan |
| LDHS | Lower Dauphin High School |
| LDMS | Lower Dauphin Middle School |
| LDSD | Lower Dauphin School District |
| LPT | Lower Paxton Township |
| LT | Londonderry Township |
| LTEOC | Londonderry Township Emergency Operations Center |
| MAHS | Middletown Area High School |
| MHS | Milton Hershey School |
| MOC | Media Operations Center |
| MS | Middle School |
| MSC | Medical Services Coordinator |
| MTCCC | Mannheim Township Congregate Care Center |
| MTERP | Manchester Township Emergency Response Plan |
| MTMS | Mannheim Township Middle School |
| NARS | Nuclear Accident Reporting System |
| NCMS | New Cumberland Middle School |

| | |
|---|---|
| NGS | Nuclear Generating Station |
| NIMS | National Incident Management System |
| NPP | Nuclear Power Plants |
| NRC | Nuclear Regulatory Commission |
| NWS | National Weather Service |
| ORO | Offsite Response Organization |
| PA | Public Address |
| PAD | Protective Action Decisions |
| PAR | Protective Action Recommendation |
| PASD | Palmyra Area School District |
| PD | Police Department |
| PEMA | Pennsylvania Emergency Management Agency |
| PGSD | Pine Grove School District |
| PHS | Palmyra High School |
| PHVFD | Pleasant Hall Volunteer Fire Department |
| PIO | Public Information Officer |
| PRD | Permanent Record Dosimeter |
| PSC | Police Services Coordinator |
| PSP | Pennsylvania State Police |
| RAC | Radiological Assistance Committee |
| RACES | Radio Amateur Civil Emergency Services |
| RAT | Route Alerting Team |
| RCRS | Road Condition Reporting System |
| REP | Radiological Emergency Preparedness |
| RERP | Radiological Emergency Response Plan |
| RIRP | Radiological Incident Response Plan |
| RO | Radiological Officer |
| RSAN | Roam Security Alert Network |
| SAE | SITE AREA EMERGENCY |
| SBIS | Shallow Brook Intermediate School |
| SCRA | Schuylkill County Repeater Association |
| SD | School District |
| SEOC | State Emergency Operation Center |
| SEVAN | State Emergency Voice Activated Network |
| SLO | State Liaison Officer |
| SLT | South Londonderry Township |
| SOP | Standard Operating Procedure |
| SPERT | Special Police Emergency Response Team |
| SSO | Senior State Official |
| TC | Transportation Coordinator |

| | |
|---|---|
| TCP | Traffic Control Points |
| TEDE | Total Effective Dose Equivalent |
| TMI | Three Mile Island |
| TMINGS | Three Mile Island Nuclear Generating Station |
| TMINPS | Three Mile Island Nuclear Power Station |
| TNS | Telephone Notification System |
| WSSD | West Shore School District |
| YCEOC | York County Emergency Operations Center |

# APPENDIX D: EXERCISE PLAN

The enclosed Exercise Plan was created as an overall tool for facilitation and implementation of the TMI 2011 Plume Exercise and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program with the Radiological Emergency Preparedness Program Exercise Methodology. The Exercise Plan was originally drafted and published by the Pennsylvania Emergency Agency (PEMA) as a independent document and is annexed here.

NATIONAL EXERCISE PROGRAM

# Exercise Plan

## U.S. Department of Homeland Security

Exercise Date: 4/12/11

FEMA

Publishing Date: MM/DD/YY

For Official Use Only

# PREFACE

The 2011 Three Mile Island Plume Exercise Evaluated Full Scale Exercise (FSE) is sponsored by the Federal Emergency Management Agency (FEMA) and the Pennsylvania Emergency Management Agency (PEMA). This Exercise Plan (ExPlan) was produced with input, advice, and assistance from the Exercise Planning Team (EPT), which followed the guidance set forth in the Federal Emergency Management Agency, Homeland Security Exercise and Evaluation Program (HSEEP).

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

The 2011 Three Mile Island Plume Exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, Controllers, and Evaluators, but Players may view other materials deemed necessary for their performance. The ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook is a restricted document intended for Controllers and Evaluators only.*

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

# HANDLING INSTRUCTIONS

1. The title of this document is the *2011 Three Mile Island Plume Exercise Plan (ExPlan).*
2. The information gathered in this ExPlan is *For Official Use Only (FOUO)* and should be handled as sensitive information not to be disclosed. This document should be safeguarded, handled, transmitted, and stored in accordance with appropriate security directives. Reproduction of this document, in whole or in part, without prior approval from the Exercise Planning Director is prohibited.
3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, will be stored in a locked container or area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
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# CHAPTER 1: GENERAL INFORMATION

## Introduction

The 2011 Three Mile Island Plume Exercise is a full-scale exercise (FSE) designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. An FSE is a complex event that requires detailed planning. To conduct an effective exercise, subject matter experts (SMEs) and local representatives from numerous agencies have taken part in the planning process and will take part in exercise conduct and evaluation.

This Exercise Plan (ExPlan) was produced at the direction of the Federal Emergency Management Agency and the Pennsylvania Emergency Management Agency with the input, advice, and assistance of the Exercise Planning Team. The 2011 Three Mile Island Plume Exercise is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

## Confidentiality

The 2011 Three Mile Island Plume Exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance. This ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbooks are restricted documents intended for controllers and evaluators only.*

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

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

## Purpose

The purpose of this exercise is to evaluate player actions against current response plans and capabilities for a nuclear power plant-related incident, and to comply with the requirements of 44 CFR 350 and the guidelines of NUREG 0654/FEMA-REP-1. Exercise planners utilized the elements described in the 67 FR 20580 (April 25, 2002) and Interim Radiological Emergency Preparedness (REP) Program Manual (August 2002) to develop this exercise.

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

## Target Capabilities

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

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

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

## Exercise Objectives

The Emergency Preparedness Evaluation Areas – the elements and sub-elements – for this exercise are those that are required to be demonstrated in every exercise, as required by 67 FR 20580 (April 25, 2002) and the *Interim REP Program Manual (August 2002)*. Appendix B Extent of Play shows the emergency preparedness elements that are required to be demonstrated in the 2011 Three Mile Island Plume Exercise, along with the level of demonstration that will be displayed in the exercise (i.e., fully demonstrated, limited demonstration, simulated, out-of-sequence interviews, not demonstrated).

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

## Outstanding Issues

There is one Area Requiring Corrective Action (ARCAs) as a result of the FEMA-evaluated plume-phase exercise at Three Mile Island in April 2009:

| COUNTY | ARCA NUMBER | FACILITY EVALUATED |
|---|---|---|
| **Lancaster** | **64-09-3.a.1A-03** | Conoy Township 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. |

# CHAPTER 2: EXERCISE LOGISTICS

## Exercise Summary

### General

The 2011 Three Mile Island Plume Exercise is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at a nuclear power plant. The 2011 Three Mile Island Plume Exercise will be conducted on April 12, 2011. Out of sequence evaluations will be conducted as follows:

Schools – April 12th

Pennsylvania State Police – April 12th

Emergency Worker Monitoring & Decontamination - April 13th

Reception Centers – April 13th

Mass Care Shelters – April 13th

Exercise play on April 12th is scheduled to end at 2200 hours or before. The exercise may conclude when the Lead Controller in consultation with FEMA and the Utility determine that the exercise objectives have been met at each venue.

### Assumptions

Assumptions constitute the implied factual foundation for the exercise and, hence, are assumed to be present before the start of the exercise. The following general assumptions apply to the 2011 Three Mile Island Plume Exercise:

- The exercise will be graded against the REPP criteria. Elements outside the scope of the REP criteria will not be graded.
- This exercise will be conducted in a no-fault learning environment wherein systems and processes, not individuals, will be evaluated.
- Exercise simulation will be realistic and plausible, containing sufficient detail from which to respond.
- Exercise players will react to the information and situations as they are presented, in the same manner as if this had been a real event.

## Constructs and Constraints

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

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

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

## Exercise Participants

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

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

- *Evaluators.* Evaluators are chosen to evaluate and provide feedback on a designated functional area of the exercise. They are chosen based on their expertise in the functional area(s) they have been assigned to review during the exercise and their familiarity with local emergency response procedures. Evaluators assess and document players' performance against established emergency plans and exercise evaluation criteria, in accordance with HSEEP standards and within the bounds of REP Program guidance and regulations. They are typically chosen from amongst planning committee members or the agencies/organizations that are participating in the exercise. FEMA evaluators are members of the Region III REP Program staff, representatives of the Radiological Assistance Committee, and contractors. FEMA Evaluators will not serve as Controllers.
- *Actors.* Actors are exercise participants who act or simulate specific roles during exercise play. They are typically volunteers who have been recruited to play the role of victims or other bystanders.
- *Observers.* Observers visit or view selected segments of the exercise. Observers do not play in the exercise, and do not perform any control or evaluation functions. Observers will view the exercise from a designated observation area and will be asked to remain within the observation area during the exercise. PEMA observers will be present at selected locations as assigned by the Lead Controller. PEMA observers will receive an observer briefing prior to the day of the exercise. Any V.I.P.s or other visitors will be handled by each agency or location (Municipal EOC, County EOC, etc.) according to that agencies policies and procedures.
- *Media Personnel.* Some media personnel may be present as observers pending approval by the Exercise Director in coordination with the PEMA Press Office. Media interaction may also be simulated by Actors at the Joint Information Center during the simulated press briefing to enhance realism and meet related exercise objectives.
- *Support Staff.* Exercise support staff includes individuals who are assigned administrative and logistical support tasks during the exercise (i.e. registration, catering, etc.

## Exercise Tools

### Controller and Evaluator Handbooks

The 2011 Three Mile Island Plume Exercise Controller and Evaluator Handbooks are designed to help exercise Controllers and Evaluators conduct and evaluate an effective exercise. These Handbooks also enable Controllers and Evaluators to understand their roles and responsibilities in exercise execution and evaluation. Should a Player, Observer, or media representative find an unattended Handbook, it should be provided to the nearest Controller or Evaluator.

### Master Scenario Events List

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

For the 2011 Three Mile Island Plume Exercise the MSEL will be used primarily for out of sequence exercise play. During the plume phase the exercise will be driven by the simulator at the utility. Notifications will go out from the utility in the same manner as they would in a real event with all communications being preceded and terminated by the phrase "This is a Drill". Additionally, Bureau of Radiation Protection (BRP) field teams will be utilizing "exercise measuring instruments" that receive input from the Virtual Plume software. The Virtual Plume software will be programmed to reflect expected conditions at any given time during the exercise.

## Exercise Implementation

### Exercise Play

Exercise play will begin at approximately 1630 hours with a situation update going to each participating venue. Play will proceed according to the events outlined in the MSEL, in accordance with established plans and procedures. The exercise will conclude upon the completion of operations and attainment of the exercise objectives, as determined by the Lead Controller after consultation with FEMA and the Utility.

### Exercise Rules

The following are the general rules that govern exercise play:

- Real-world emergency actions take priority over exercise actions.
- Exercise participants will comply with real-world response procedures, unless otherwise directed by control staff.
- All communications (written, radio, telephone, etc.) made during the exercise will begin and end with the phrase, *"This is a drill."*

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

## Safety Requirements

### General

Exercise participant safety takes priority over exercise events. Although the organizations involved in the 2011 Three Mile Island Plume Exercise come from various response agencies, they share the basic responsibility for ensuring a safe environment for all personnel involved in the exercise. In addition, aspects of an emergency response are dangerous. Professional health and safety ethics should guide all participants to operate in their assigned roles in the safest manner possible. The following general requirements apply to the exercise:

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

### Exercise Setup

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

## Accident Reporting and Real Emergencies

- Anyone observing a participant who is seriously ill or injured will provide aid within their training, call the County 911 Center for additional aid or enlist the aid of another person to call, and advise the nearest controller. Anyone calling County 911 will use the phrase "this is not a drill" prior to explaining the injury or illness.
- The controller who is made aware of a real emergency will contact the County 911 center (if this call has not already been made) and request the appropriate aid. The controller will use the phrase "this is not a drill" prior to explaining the injury or illness.

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

## Site Access

### Security

Exercise play for the 2011 Three Mile Island Plume Exercise will be conducted at numerous sites with varying degrees of security requirements. The Three Mile Island will control entry to the Utility and the Emergency Operations Facility. Security at State, County, and Municipal Emergency Operations Centers will be conducted according to their individual security procedures. Individual Site Controllers will be in charge of entry into their respective exercise sites. To prevent confusion and interruption of the exercise, access to the exercise sites and the SimCell will be limited to exercise participants and approved Observers only. Players should advise their venue's controller or evaluator if an unauthorized person is present. Each organization should follow its internal security procedures, augmented as necessary to comply with exercise requirements.

### PEMA Observers and Liaison Officers

PEMA will assign Observers and Liaison Officers to each County and Municipal Emergency Operations Center that is being evaluated in the 2011 Three Mile Island Plume Exercise. The Lead Controller will provide a list of Observers and Liaison Officers to the appropriate Off-Site Response Organizations prior to the day of the exercise. All Observers and Liaison Officers will receive a pre-exercise briefing.

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

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

### Parking and Directions

Directions to each venue area are available from the Lead Controller. Parking will be controlled according to existing policy at each individual location.

### Restroom Facilities

Restroom facilities will be available at each venue.

### Exercise Identification

Exercise participants will display their existing organizational identification badges.

## Communications Plan

### Exercise Start, Suspension, and Termination Instructions

The exercise on April 12, 2011 is scheduled to run for 6.5 hours or until the Lead Controller after consultation with FEMA and the Utility determine that the exercise objectives have been met. The exercise is scheduled to end by 2200 hours. The Lead Controller will announce the exercise suspension or termination through the State Emergency Operations Center.

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

## Player Communication

Players will use routine, in-place agency communication systems. Additional communication assets may be made available as the exercise progresses. All exercise communication over primary dispatch channels will cease immediately if a real world emergency is announced. Communications concerning a real world emergency will be preceded by the phrase "This is not drill". In no instance will exercise communication interfere with real-world emergency communications. Exercise communication over these channels will recommence when authorized by the Exercise Director after he is advised by County 911 that it is safe to do so. Each venue will coordinate its own internal communication networks and channels.

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

## Player Briefing

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

## Public Affairs

Joint Information Centers will be established at both the Utility Emergency Operations Facility and the State Emergency Operations Center. Actors will play the role of reporters and (simulated **not publicly broadcast)** "public briefings" will be given as they would for a real incident. The briefings will be available for viewing at the County EOCs.

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

# CHAPTER 3: PLAYER GUIDELINES

## Exercise Staff

### Exercise Director

The Exercise Director has the overall responsibility for planning, coordinating, and overseeing all exercise functions. The Exercise Director for the 2011 Three Mile Island Plume Exercise is the Radiological Emergency Preparedness Regional Assistance Committee Chair. The Exercise Director has delegated the following responsibilities to other team members:

The FEMA Region III Site Specialist for the Three Mile Island has authority to make determinations concerning evaluation issues and re-demonstrations, and,

The PEMA HSEEP Coordinator has responsibility to organize and lead the Exercise Planning Team.

### Trusted Agents

Trusted agents are exercise planners and participants who are responsible for developing the Scenario and the Master Scenario Events List (MSEL). These documents are restricted and are not available to the rest of the Exercise Planning Team, Players, or other Participants. The trusted agents for the 2011 Three Mile Island Plume Exercise include the Exercise Director, Lead Controller, Bureau of Radiation Protection (BRP) Representative, FEMA Emergency Management Program Specialist, and the Radiological Emergency Preparedness Regional Assistance Committee (RAC) Chair.

### Lead Controller

The Lead Controller also functions as a Trusted Agent. As such he is involved in developing the Master Scenario Events List and is privy to the scenario used at the Utility to generate exercise play. The Lead Controller is responsible for scheduling controllers at the "Out of Sequence" components of the exercise and the 2011 Three Mile Island Plume Exercise. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller will be the PEMA REP Training Program Manager is stationed in the State EOC during the Plume Exercise.

### Controllers

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

### Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the 2011 Three Mile Island Plume Exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Overview of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After Action process. The Lead Evaluator will be the FEMA Region III REP Site Specialist.

### Evaluators

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

## Player Instructions

### Before the Exercise

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

## During the Exercise

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

## Following the Exercise

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

## Simulation Guidelines

Because the 2011 Three Mile Island Plume Exercise is of limited duration and scope, the physical description of what would fully occur at the incident sites and surrounding areas will be relayed to the Players by Simulators or Controllers.

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

# CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

## Exercise Documentation

The goal of the 2011 Three Mile Island Plume Exercise is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential nuclear power plant incident. After the exercise, data collected by Controllers, Evaluators, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

### Exercise Evaluation Guides

DHS has developed Exercise Evaluation Guides (EEGs) that identify expected activities for evaluation, provide consistency across exercises, and link individual tasks to disciplines and expected outcomes.

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

## DEBRIEFING

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

## Exercise Evaluation Hotwash

Controllers, Evaluators, and selected exercise participants will attend a facilitated Controller and Evaluator Hotwash on April 14, 2011 at 1500 hours at the Hilton Garden Inn at 3943 Tecport Drive, Harrisburg, Pa. 17111. During the Hotwash these individuals will discuss their observations of the exercise in an open environment to clarify actions taken during the exercise.

## Participants and Public/Media Briefings

The Participants Briefing will be conducted on April 15, 2011 at 1000 hours followed immediately by the Public/Media Briefing at 1100 hours. Both briefings will be held at the Hilton Garden Inn at 3943 Tecport Drive, Harrisburg, Pa. 17111.

## After Action Report

The AAR is the culmination of the exercise. It is a written report outlining the strengths and areas for improvement identified during the exercise. The AAR will include the timeline, executive summary, scenario description, mission outcomes, and capability analysis. The AAR will be drafted by a core group of individuals from the exercise planning team.

## After Action Conference and Improvement Plan

The improvement process represents the comprehensive, continuing preparedness effort of which the 2011 Three Mile Island Plume Exercise is a part. The lessons learned and recommendations from the AAR will be incorporated into the Improvement Plan (IP).

### After Action Conference

The After Action Conference (AAC), scheduled for May 20, 2011 at 1000 hours, is a forum for jurisdiction officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP. The After Action Conference will be conducted via a conference call.

### Improvement Plan

The IP identifies how recommendations will be addressed, including what actions will be taken, who is responsible, and the timeline for completion. It is created by key stakeholders from the 2011 Three Mile Island Plume Exercise participating agency officials during the AAC scheduled for May 20, 2011.

# APPENDIX A: EXERCISE SCHEDULE

**Table A.1** *[TMI] Schedule*

| Time (Tentative) | Personnel | Activity |
|---|---|---|
| **4/12/2011** | | |
| 0900 - 1100 | | Schools and Montour County EOC |
| 1600 - 2230 | | Plume Exercise |
| | | |
| **4/13/2011** | | |
| 1000 – 1200 | | State Police |
| 1900 - 2100 | | Reception Centers, Mass Care, EW Mon/Decon |
| | | |
| **4/14/2011** | | |
| 1500 | | Hotwash |
| | | |
| **4/15/2011** | | |
| 1000 | | Participants Briefing |
| 1100 | | Public/Media Briefing |

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# APPENDIX E: EXTENT OF PLAY

# THREE MILE ISLAND NUCLEAR GENERATING STATION

# 2011 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

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## METHOD OF OPERATION

### 1. Three Mile Island Nuclear 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
Plume Exercise – Exelon EOF
Field Sampling Teams & Command Vehicle – **(Not Evaluated)**

BRP personnel will be evaluated as participants with the exception of the Field Sampling Team and Command Vehicle.

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

This "Method of Operation" Document includes activities for the Full-Scale Plume Exercise (April 12, 2011), and the "Out of Sequence" Activities (April 12 & April 13, 2011).

**A. Plume Exercise – April 12, 2011**

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 12, 2011.**

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 12, 2011. 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 13, 2011.

PEMA personnel will serve as "Observers" at the various field exercise locations during the evening "Out-of-Sequence" component April 13, 2011. 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 12, 2011):

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 12, 2010.

## 7. Controllers

A lead controller will be present in the state EOC for the plume exercise and the out of sequence school exercise. Controllers will be supplied by the utility and will be present at the emergency worker monitoring/decontaminating stations and the mass care monitoring/ decontamination centers (April 13, 2010). 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 check source for the purpose of conducting an operational test. Additionally, appropriate test sources will be available and used to verify the operation of the monitoring / survey instruments per manufacturer's 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 12, 2011):** Federal evaluators will be present at the identified "out-of-sequence" demonstration sites per Attachment A, Section I.A.1 These include the identified Public School Districts.

**Plume Phase Exercise (April 12, 2011):** Federal evaluators will be present at the SEOC and identified risk and support county EOC's to evaluate player response to the actual and simulated events in the exercise scenario. Additionally, one-third of the risk municipalities will be federally evaluated. As required, a "floating-evaluator" will be made available for the purpose of evaluating any ORO locations not scheduled to have a federal evaluator, but having a prior issue (Attachment A, Section I.A.2 and I.A.3).

**Out of Sequence Period (April 13, 2011):** 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 Hanover General Hospital, York County, on June 5th, 2009.

The out-of-sequence exercise window for school demonstrations will be from 9:00 – 11:00 a.m. on April 12, 2011.

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 13, 2011. Locations are specified within Attachment A, Section B.

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 13, 2011.

County and municipal EOC operations will be conducted on the evening of April 12, 2011. (Please refer to the Extent of Play Attachment A I.A.2 and I.A.3)

All demonstrations will commence promptly and, barring any complications, not continue beyond the time of the designated demonstration window (Demonstration Tables, Attachment A).

**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 federal evaluator that all evaluation areas have been demonstrated and/or completed, the risk municipality EOCs may request approval from their county EOC to "stand-down".
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 or by approval of the federal evaluator. **The State EOC will issue an Exercise Termination Message.**

## 12. General Concepts

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

## 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
# 2011 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 counties/municipalities and support counties will conduct call-outs to demonstrate the mobilization of key personnel. The utility JIC will be evaluated for this exercise.*

- *Actual calls (or pager notifications) will be made to the municipal EOC personnel for the plume phase exercise, April 12, 2011, 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.*

**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. Note that Schuylkill County recently completed EOC renovations.

***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:***

*The plant will communicate to the risk counties and State EOC utilizing the Dedicated Automatic Ring Down Telephone System (ARD) (Primary) and the commercial telephone system (Secondary). Risk and Support Counties will intercommunicate with the State EOC via the commercial telephone system (Primary), SEVAN (Secondary) and other systems. In the event that the plant is unable to contact the state EOC via the Dedicated Automatic Ring Down Telephone, the Power Plant will contact the State EOC via the commercial telephone system. If the plant cannot contact the State EOC, the Power Plant will contact the Dauphin County EOC and Dauphin County EOC fulfill the role of primary contact until such time as communications with the State EOC can be made.*

*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:***

*Radiological Survey Instruments are calibrated per manufactures recommendations. Support counties do not have DRDs, or KI, but those responsible for reception centers and / or monitoring and decontamination centers will have PRDs. Neither CDV-700 nor CDV-138 instruments are in use in the area.*

*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, however, lot numbers and expiration dates should be visible for inspection. KI questions will be addressed through interviews.*

*Annual Direct Reading Dosimeter leakage testing verification will be available to the evaluator.*

*Reception Centers shall be evaluated on their ability to use maps or other documentation to direct evacuating persons to the correct Monitoring/Decontamination Centers and/or Mass Care Centers (as Applicable).*

## 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**

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

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

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

*Radiological briefings (verbal and/or video) will be provided to address exposure limits, procedures to replace those personnel approaching exposure limits, and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of actual KI to emergency workers will be simulated.*

*The completion of a maximum of 6 "Dosimetry-KI Report Form" will be demonstrated per applicable action location.*

**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, 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 affected for all members of the team by one dosimeter worn by the team leader.

Emergency workers who are assigned to low exposure rate areas, 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. In order to demonstrate an understanding of the use of the dosimetry equipment, KI and associated forms; the location need only remove and distribute / issue a maximum of six (6) units of dosimetry from their inventory. Simulation PRDs with mock serial numbers may be used if actual PRD's are not demonstrated.*

*Some counties maintain the inventories of municipal dosimetry and KI at a central location. For evaluation these counties may distribute simulated or real units for the exercise. Some may predistribute the instrument packages to the municipalities in advance of the drill. If the county predistributes dosimetry and KI the plans would specify how and at what point they would be disbursed in a real event. County and Municipal personnel should be able to explain the county to municipal distribution process. Municipalities will be able to demonstrate the dispersal, documentation, and administration of the dosimetry and KI including the reading and zeroing of DRD's.*

**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 may be issued a simulated PRD with mock serial numbers if actual PRD's are not demonstrated.*

**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**

OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points, consistent with protective action decisions (for example, evacuating, sheltering, and relocation), in a timely manner.

OROs should demonstrate the capability to provide instructions to traffic and access control staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled.

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

In instances where OROs lack the 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 who have the 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 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.*

**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. OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, nuclear insurers, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

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

*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:***

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

**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.

OROs 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:***

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

**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.

OROs 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:***

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

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

**INTENT**

This sub-element is derived from NUREG-0654, 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 sub-element will not be evaluated 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 sub-element will not be evaluated 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 (OROs) 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, simulated 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.) The risk county siren operator will receive an inject from the county liaison indicating that a particular siren has failed. This siren failure will then be communicated to the appropriate municipalities so they can demonstrate their back-up route alert response. The back-up route alerting must be completed in no more than 45 minutes from inject to finish of back-up route alert. 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.

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

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

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

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

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

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

*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 information/news statements required by the ORO plans will be simulated. 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.*

*Lancaster County has previously demonstrated and has been exempted from demonstrating this requirement on this exercise.*

## 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. Where the reception center is co-located with the mass care facility, strip maps or written directions are not required.*

*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 guidance 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 permanent 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)".*

*Those counties that have identified more than three mass care facilities would choose one facility to be evaluated along with the monitoring/decontamination segment demonstrating how the both functions would share space within the facility and how they would receive and control arriving evacuees. The other facilities scheduled for evaluation during this evaluation cycle would demonstrate out-of-sequence. This evaluation would involve county, Red Cross, facility representatives, PEMA, and FEMA. This walk-through demonstration would allow the evaluator to view the facility, to observe maps, shelter layouts, plans, and other documentation relevant to mass care operations, and to provide an opportunity to interview Red Cross, county, or other persons who would take part in the activation, setup, and operation of the facility.*

*In most cases the walk through is done at times when the facility is in operation and therefore not all areas (such as locker rooms/showers) may be accessible for evaluation. Each mass care facility must be evaluated by demonstration or walkthrough in every 6 year cycle (TMI or PBAP. ) This out of sequence demonstration window will on Wednesday April 13, 2011 from 1:00 p.m. to 4:00 p.m.*

*The previously unevaluated Lancaster County mass care facilities that have not been evaluated during the out of sequence portion will be evaluated by walk-through within 30 days of the exercise. The date(s) and time(s) of evaluation have not yet been determined.*

*For those mass care centers demonstrating with monitoring and decontamination teams, the 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 operational window. 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 13, 2011.*

## 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.

**Note: This sub-element was federally evaluated at Hanover General Hospital (York County), June 5th, 2009.**

***American Red Cross risk and support county chapters:***

Lebanon County Chapter
1220 Mifflin Street
Lebanon, PA 17046
Karen Clemens (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
Thomas Reardon (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 17901
Janet Curtis (570) 622-9550

York County Chapter
724 South George Street
York, PA 17403
Robert Straw (717) 845-2751

Adams County Chapter
Office Number 717-334-1814
(Combined with York County)

## ATTACHMENT A

## Three Mile Island Nuclear Generating Station 2011
## Extent of Play Demonstration Tables

### I. PLUME PHASE EXERCISE –

#### A. Activities – April 12, 2011

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**

| COUNTY | SCHOOL DISTRICT | SCHOOL |
|---|---|---|
| **Dauphin** | Central Dauphin | 1. CD East HS<br>2. Swatara Middle School<br>3. Tri Community Elem. School |
| | Derry Township | 1. Hershey Intermediate Elem.<br>2. Hershey Middle School |
| | Harrisburg | 1. Harrisburg HS<br>2. Scott School<br>3. Shimmell School<br>4. CAIU Capital AS for the Arts |
| | Lower Dauphin | 1. Lower Dauphin HS<br>2. Price Building<br>3. South Hanover Elem. |
| | Middletown Area | 1. Middletown Area HS |
| | Milton Hershey | 1. Milton Hershey School |
| | Steelton-Highspire | 1.Steelton-Highspire HS |
| **Lancaster** | Donegal | 1.Donegal HS<br>2.Donegal Springs ES |
| | Elizabethtown Area | 1. Mill Road ES<br>2. East High Street Elem<br>3. Fairview ES |
| **Lebanon** | Palmyra Area | 1.Palmyra HS |

| | | |
|---|---|---|
| **York** | Central York | 1. Central York MS<br>2. Hayshire Elem.<br>3. Roundtown ES |
| | Northeastern | 1. Northeastern MS<br>2. Spring Forge Intermediate<br>3. Shallow Brook Intermediate<br>4. York Haven ES |
| | Dover Area | 1. Dover Intermediate School |
| | Eastern | 1. Kreutz Creek Elem. |
| | West Shore | 1. Cedar Cliff HS<br>2. New Cumberland MS<br>3. Allen MS<br>4. Highland Elem<br>5. Red Mill ES |

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

| DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES (Plume Phase Exercise) | | |
|---|---|---|
| **COUNTY** | **DATE** | **Time** |
| Adams | April 12,2011 | Per Scenario |
| Cumberland | April 12,2011 | Per Scenario |
| Dauphin | April 12,2011 | Per Scenario |
| Franklin* | April 12,2011 | Per Scenario |
| Lancaster | Participate/Not Evaluated | Per Scenario |
| Lebanon | April 12,2011 | Per Scenario |
| York | April 12,2011 | Per Scenario |
| Schuylkill | April 12,2011 | Per Scenario |

*Note that Franklin County EOC is a new location

**3. Municipal Emergency Operations Centers (EOC)**
**Time: Per Scenario**
**Note: Bold is federally evaluated,** No Bold is Participating

| DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES (Plume Phase Exercise) | | |
|---|---|---|
| **RISK COUNTY** | **MUNICIPALITY** | **DATE** |
| **Cumberland** | **New Cumberland Borough** | April 12,2011 |
| | Lower Allen Township | April 12,2011 |
| **Dauphin** | Conewago Township | April 12,2011 |
| | Derry Township | April 12,2011 |
| | **Harrisburg City** | April 12,2011 |
| | **Highspire Borough** | April 12,2011 |
| | Hummelstown Borough | April 12,2011 |
| | **Londonderry Township** | April 12,2011 |
| | **Lower Paxton Township** | April 12,2011 |
| | Lower Swatara Township | April 12,2011 |
| | *Middletown/Royalton Boroughs | April 12,2011 |
| | **Paxtang Borough** | April 12,2011 |
| | **South Hanover Township** | April 12,2011 |
| | Steelton Borough | April 12,2011 |
| | Swatara Township | April 12,2011 |
| **Lancaster** | **Conoy Township | April 12,2011 |
| | **East Donegal Township** | April 12,2011 |
| | ***Elizabethtown Borough/West Donegal Township/Mount Joy Township** | April 12,2011 |
| **Lebanon** | **South Londonderry Township** | April 12,2011 |
| **York** | Conewago Township | April 12,2011 |
| | **Dover Township** | April 12,2011 |
| | Fairview Township | April 12,2011 |
| | Goldsboro Borough | April 12,2011 |
| | Hellam Township | April 12,2011 |
| | ***Lewisberry Borough/Newberry Township** | April 12,2011 |
| | **Manchester Township** | April 12,2011 |
| | ***Northeast Area (Mt. Wolf/E. Manchester/ Manchester)** | April 12,2011 |
| | Springettsbury Township | April 12,2011 |
| | Warrington Township | April 12,2011 |
| | York Haven Borough | April 12,2011 |

* Joint EOC
** A FEMA evaluator will be available to redemonstrate an ARCA (See Attachment B).

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

| | | |
|---|---|---|
| **Cumberland** | New Cumberland Borough | April 12,2011 |
| **Dauphin** | Highspire Borough | April 12,2011 |
| **Lancaster** | East Donegal Township | April 12,2011 |
| **Lebanon** | South Londonderry Township | April 12,2011 |
| **York** | Newberry Township | April 12,2011 |

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 13, 2011**.

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 FEMA 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 12, 2011.

| **Municipal / Regional Police Forces** | |
|---|---|
| **Cumberland** | New Cumberland Borough |
| **Dauphin** | None |
| **Lancaster** | Elizabethtown Borough PD<br>Susquehanna Regional PD |
| **Lebanon** | South Londonderry Township |
| **York** | None |

## B. April 12,2011

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

| DEMONSTRATION of Reception Centers | | |
|---|---|---|
| **COUNTY** | **DATE** | **Time** |
| **Adams** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Cumberland** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Dauphin** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Franklin** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Lancaster** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Lebanon** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Schuylkill** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **York** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |

| COUNTY | Reception Center Location |
|---|---|
| **Adams** | Not Evaluated |
| **Cumberland** | Big Spring HS |
| **Dauphin** | None |
| **Franklin** | Faust Jr. High School |
| **Lancaster** | Park City Mall |
| **Lebanon** | Lebanon County Career and Tech Center<br>Eastern Lebanon County HS and MS |
| **Schuylkill** | Blue Mountain HS |
| **York** | Southern School Complex |

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

| COUNTY | DEMONSTRATION of Mon/Decon Centers | |
|---|---|---|
| | DATE | Time |
| **Adams** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Cumberland** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Dauphin** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Franklin** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Lancaster** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Lebanon** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Schuylkill** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **York** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |

| COUNTY | Mon/Decon Center Locations | |
|---|---|---|
| | | Quantity |
| **Adams** | Not Evaluated | 0 |
| **Cumberland** | Big Spring HS | 1 |
| **Dauphin** | None | 0 |
| **Franklin** | *Faust Jr. High School | 1 |
| **Lancaster** | Manheim Township Complex | 1 |
| **Lebanon** | Lebanon County Career and Tech Center | 1 |
| **Schuylkill** | Blue Mountain HS | 1 |
| **York** | Southern School Complex | 1 |

*Note that Faust Jr. High School has not been previously evaluated. Due to schedule conflicts the interior of the school is unavailable except for evaluator walkthrough. The county will demonstrate their backup/overflow plan in the parking lot of the facility.

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

| COUNTY | DEMONSTRATION of Mass Care Centers | |
|---|---|---|
| | DATE | Time |
| **Adams** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Cumberland** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Dauphin** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Franklin** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Lancaster** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Lancaster Walk Through** | April 13, 2011 | 1:00 p.m. – 4:00 p.m. |
| **Lebanon** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **Schuylkill** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |
| **York** | April 13, 2011 | 7:00 p.m. – 9:30 p.m. |

**Note: Bold is Evaluated in the evening,** No Bold is evaluated by walk through in the afternoon.

| COUNTY | Mass Care Center Locations | |
|---|---|---|
| | | Quantity |
| **Adams** | Not Evaluated | 0 |
| **Cumberland** | ***Big Spring HS** | 1 |
| **Dauphin** | **Halifax Area HS**<br>**Lenkerville Elem. School** | 2 |
| **Franklin** | **Faust Jr. High School** | 1 |
| **Lancaster** | ***Manheim Township MS** | 1 |
| Lancaster Walk Through - Out of Sequence | Manheim Township HS<br>Warwick HS<br>Warwick MS<br>Cocalico HS<br>Cocalico MS<br>Conestoga Valley HS<br>Conestoga Valley MS | 7 |
| **Lebanon** | **Northern Lebanon HS** | 1 |
| **Schuylkill** | **Blue Mountain HS** | 1 |
| **York** | **Southern School Complex** | 1 |

*Note that the county will be exercising an unevaluated animal care component during the exercise.

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

**Time: 7:00 – 9:30 PM**

| | | |
|---|---|---|
| **Cumberland** | *West Shore Bureau Fire Station #2 Lemoyne | April 13, 2011 |
| **Dauphin** | Harrisburg Area Community College | April 13, 2011 |
| **Lancaster** | FD Mount Joy | April 13, 2011 |
| **Lebanon** | Annville Union Hose Fire Company<br>Fredricksburg Fire Company | April 13, 2011 |
| **York** | Monaghan Twp. Fire Co | April 13, 2011 |

***This location is utilizing an alternate layout. The normal layout will be visible for evaluator review but is unavailable for setup in this exercise.**

## II. POST PLUME EXERCISE

**Not Applicable for this Exercise. The Post-Plume Exercise was last conducted in conjunction with the Limerick 2010 Post Plume Exercise**

## ATTACHMENT B

## PREVIOUS ISSUES

| COUNTY | ARCA NUMBER | FACILITY EVALUATED |
|---|---|---|
| **Lancaster** | **64-09-3.a.1A-03** | Conoy Township 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. |
| | | |

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