Three Mile Island Nuclear Generation Station – May 3-4, 2005

Final Report - Radiological Emergency Preparedness Program

August 4, 2005

FEMA

FEMA Region III

FEMA

Final Exercise Report

Three Mile Island Nuclear Generation Station

Licensee:	**Exelon Nuclear**
Exercise Date:	**May 3-4, 2005**
Report Date:	**August 4, 2005**

U.S. DEPARTMENT OF HOMELAND SECURITY
FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION III

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I. EXECUTIVE SUMMARY

On May 3 and 4, 2005, the U.S. Department of Homeland Security, Federal Emergency Management Agency (FEMA), Region III, conducted an exercise in the plume exposure pathway emergency planning zone (EPZ) around the Three Mile Island Nuclear Generating Station (TMI). The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was 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 previous exercise at this site was conducted on April 22 and 23, 2003.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise, including: the Commonwealth of Pennsylvania, five risk counties (Cumberland, Dauphin, Lancaster, Lebanon, and York) and nine risk municipalities in the risk counties. The risk municipality for Cumberland County included Lower Allen Township. The risk municipalities for Dauphin County included Harrisburg City and Paxtang Borough. The risk municipality for Lancaster County included Conoy Township. The risk municipality for Lebanon County included South Londonderry Township. The risk municipalities for York County included Dover Township, Manchester Township, Lewisbury Borough/Newberry Township, and the Northeast Area (Mt. Wolf & Manchester Borough /East Manchester Township). Three supporting counties, Adams County, Franklin County, and Schuylkill County, also participated.

The following out-of-sequence evaluation activities were conducted during the exercise week. On the morning of May 3, 2005, FEMA evaluated fifteen school districts in the risk counties. On the morning of May 4, 2005, FEMA evaluated the State Police from all five-risk county troop locations for Traffic/Access control activities in Pennsylvania. In the evening on May 4, 2005, FEMA conducted out-of-sequence evaluations of Monitoring/Decontamination/Mass Care/Reception Center and Emergency Worker Monitoring and Decontamination facilities at the five risk counties and three support counties.

Evaluations were conducted in the evening on May 3, 2005, of the Emergency Operations Centers (EOCs) in the five risk counties, three support counties, and the Commonwealth of Pennsylvania; the EOCs of nine Risk County Municipalities were also evaluated in the evening of May 3, 2005.

An item of special interest during this exercise was the notification of day care centers located in the 10-mile EPZ of Three Mile Island. Municipalities in the Commonwealth of Pennsylvania are the responsible offsite response organizations for notifying day care centers located in their geographical/political boundaries in the event of an incident occurring at TMI. The municipal plans and procedures require that day care centers be notified of an incident at TMI at the Alert, Site Area and General Emergency and/or when Protective Action Decisions are announced. There were nine municipalities evaluated during this exercise. The jurisdictions were Lower Allen Township, Harrisburg City, Paxtang Borough, Conoy Township, South Londonderry

Township, Dover Township, Manchester Township, Lewisbury Borough/Newberry Township and Northeast Area (Mt. Wolf and Manchester Borough/E. Manchester Township). The evaluators at these locations were instructed to observe the simulated notifications at the nine municipalities. Each municipality had a Notification and Resource Manual that lists the names, address, point of contact and phone number of the day care centers located in their portion of the EPZ. In every case, the municipalities simulated notification of the day care centers in a timely manner pursuant to their codified plans and procedures.

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 evaluations of the out-of-sequence activities conducted on May 3 and 4, 2005.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. Zero Deficiencies, seven Areas Requiring Corrective Action (ARCAs), and seven planning issues were identified during this exercise; five of the ARCAs were successfully redemonstrated. In addition, seven prior ARCAs and six prior planning issues were evaluated during the exercise; all but two prior planning issues were successfully resolved. Seven prior ARCAs and one prior planning issue, not scheduled for demonstration during this exercise, remain outstanding.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities are 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.

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of 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 (44 CFR Part 354, Appendix A, 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 Regional Assistance Committee (RAC), which is chaired by FEMA.

The Commonwealth of Pennsylvania and local jurisdictions submitted their RERPs for the Three Mile Island Nuclear Generating Station to FEMA Region III and were granted formal approval of the RERPs on August 24, 1998, under 44 CFR 350.

FEMA Region III evaluated a plume REP exercise on May 3, 2005, and an out-of-sequence demonstration on May 4, 2005, to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the Three Mile Island Nuclear Generating Station. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite 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 the Regional Director.

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

- 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 Radiological Emergency Preparedness (REP) Program Manual, August 2002;

- 67 Federal Register (FR) 20580, "FEMA Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002; and

- 66 FR 47546, "FEMA Radiological Emergency Preparedness: Alert and Notification," September 12, 2001.

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

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise evaluation areas at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains: (1) descriptions of all Deficiencies and 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 unresolved ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the May 3, 2005 and May 4, 2005, exercise and out-of-sequence (OOS) demonstrations to test the offsite emergency response capabilities in the area surrounding the Three Mile Island Nuclear Generating Station. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the actual time of occurrence of key exercise events and activities.

A. Plume Emergency Planning Zone Description

The TMI Nuclear Power Station (40° 9' 12" N/76° 43' 25" W) is a nuclear power plant operated by the 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 (msl), relatively flat, and wooded on the periphery and the southern portion. Of the 470 acres that make up the island, the plant occupies approximately 200 acres in the northern portion.

Soils on the island are of the Duncannon-Chavies-Tioga Association, which comprises 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 2000 census, the total population of the 10-mile EPZ is 201,800. 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.

The 10-mile EPZ for Three Mile Island Nuclear Generating Station covers the following jurisdictions which participated in the May 3 and 4, 2005 REP Exercise:

Cumberland County
Lower Allen Township

Dauphin County
Harrisburg City
Paxtang Borough

Lancaster County
Conoy Township

Lebanon County
South Londonderry Township

York County
Dover Township
Manchester Township
Lewisbury Borough/Newberry Township
Northeast Area (Mt. Wolf & Manchester Borough/East Manchester Township)

B. Exercise Participants

The following agencies, organizations, and units of government participated in the Three Mile Island Nuclear Generating Station out-of-sequence demonstrations and REP exercise held on May 3 and 4, 2005.

Commonwealth of Pennsylvania

Exelon Nuclear
Pennsylvania Bureau of Radiation Protection
Pennsylvania Department of Agriculture
Pennsylvania Department of Conservation/Natural Resources
Pennsylvania Department of Corrections
Pennsylvania Department of Education
Pennsylvania Department of Environmental Protection
Pennsylvania Department of General Services
Pennsylvania Department of Health
Pennsylvania Department of Labor Press Secretary Office
Pennsylvania Department of License and Inspection
Pennsylvania Department of Military Affairs
Pennsylvania Department of Public Welfare
Pennsylvania Department of State Press Secretary Office
Pennsylvania Department of Transportation
Pennsylvania Emergency Management Agency
Pennsylvania Fish and Boat Commission
Pennsylvania Game Commission
Pennsylvania Governor's Office
Pennsylvania Public Utility Commission
Pennsylvania Secretary for Public Information
Pennsylvania State Police
Pennsylvania Turnpike Commission
U. S. Nuclear Regulatory Commission

Risk Jurisdictions

Cumberland County

Cumberland County 9-1-1 Communications Center
Cumberland County Board of Commissioners
Cumberland County Department of Public Safety
Cumberland County HazMat Team
Cumberland County Mass Casualty and Animal Response Teams
Cumberland County Mental Health
Cumberland County Office of Emergency Preparedness
Cumberland County Prison
Cumberland County Public Information Team
Cumberland County Sheriff's Department

Cumberland County Transportation Department
Pennsylvania Army National Guard
Pennsylvania Department of Transportation
Pennsylvania State Emergency Management Agency
Pennsylvania State Police
State Agriculture Extension
U.S. Department of Agriculture
New Cumberland Borough Council
New Cumberland Fire Department, Company 10
New Cumberland Borough Emergency Management Coordinator
New Cumberland Police
West Shore Borough Fire Company 13 Stations 1 & 2
Carlisle Army War College
Shippensberg University

Lower Allen Township
Lower Allen Township Administrative Services
Lower Allen Township Codes Department
Lower Allen Township Emergency Medical Service
Lower Allen Township Highway Department
Lower Allen Township Police Department
Lower Allen Township Public Safety
Lower Allen Township Public Works
Lower Allen Township Volunteer Fire Department

Dauphin County
Dauphin County Area Agency on Aging
Dauphin County Board of Commissioners
Dauphin County Communications Department
Dauphin County Emergency Communications Center
Dauphin County Emergency Management Agency (EMA)
Dauphin County EMA Hazardous Materials/Special Operations
Dauphin County HazMat Team
Dauphin County Mental Health Department
Dauphin County Security Department
Pennsylvania County Commissioners Association
Pennsylvania Emergency Management Agency
Pennsylvania State Police
Pennsylvania State University Cooperative Extension Office
Williams Town Emergency Management Agency
Campbelltown Fire Company
Liberty Hose Company Fire-Police Station 24

City of Harrisburg

Paxtang Borough
Paxtang Borough Department of Public Works
Paxtang Borough Emergency Management Agency
Paxtang Borough Fire Company #1, Company 40
Paxtang Borough Office of Emergency Management
Paxtang Borough Police Department

Lancaster County
Lancaster County Board of Commissioners
Lancaster County Communications Center
Lancaster County Emergency Management Agency
Lancaster County Engineer's Office
Lancaster County Fire Services
Lancaster County Geographic Information Systems
Lancaster County Medical Services
Lancaster County Public Works
Lancaster County Sheriff's Office
Pennsylvania Department of Transportation
Pennsylvania Emergency Management Agency
Pennsylvania State Police
Bainbridge Volunteer Fire Department
Hempfield Volunteer Fire and HazMat Departments

Conoy Township
Conoy Township Board of Supervisors
Conoy Township Emergency Management Agency
Conoy Township Emergency Medical Services

Lebanon County
Lebanon County Auxiliary Patrol (4)
Lebanon County Bilingual Liaison
Lebanon County Career and Technical Center (2)
Lebanon County Commissioners' Office
Lebanon County Conservation District
Lebanon County Department of Agriculture
Lebanon County Emergency Management Agency
Lebanon County Emergency Medical Services
Lebanon County Fire Department (HazMat)
Lebanon County HazMat Team
Lebanon County Mental Health/Mental Retardation Program
Lebanon County Public Works
Lebanon County School Services
Lebanon Sheriff's Office
Pennsylvania Emergency Management Agency
Pennsylvania State Police

South Londonderry Township
South Londonderry Emergency Medical Services
South Londonderry Fire Department
South Londonderry Township Emergency Management Agency
South Londonderry Township Police Department
South Londonderry Township Supervisor's Office

York County
York County 911 Communication Center
York County Commissioner's Office
York County Department of Public Works
York County Emergency Ambulance and Rescue Service
York County Emergency Medical Services
York County Fire and Rescue Services
York County HazMat Response Team
York County Intermediate Unit
York County Office of Emergency Management
York County Planning Commission
York County Public Information
York County Public Works
York County Radiological Officer
York County Sheriff's Department
York County Transportation Authority
Federal Emergency Management Agency
Pennsylvania Army National Guard
Pennsylvania Department of Transportation
Pennsylvania Emergency Management Agency
Pennsylvania State Police
Pennsylvania State University – Agricultural Extension Service
Glen Rock Hose and Ladder Company
Monaghan Township Volunteer Fire Company
Northern York County Regional Police

Dover Township
Dover Township Emergency Medical Services
Dover Township Volunteer Fire Department

Lewisbury Borough/Newberry Township

Manchester Township
Manchester Township Emergency Management Agency
Manchester Township Fire, EMS, Police and Public Works

Northeast Area (Mt. Wolf and Manchester Borough/East Manchester Township)

Support Counties

Adams County

Adams County Commissioner's Office
Adams County Department of Emergency Services
Adams County Emergency Response Team
Adams County Radiological Officer
Adams County Solicitor's Office
Gettysburg Emergency Medical Services
Gettysburg Fire Department
Gettysburg Police Department
Pennsylvania Emergency Management Agency

Franklin County

Local Emergency Commissioner's Office
Franklin County Department of Emergency Services
Franklin County Emergency Management Agency
Franklin County Sheriff's Department
Green Township Emergency Management Department
Pennsylvania Emergency Management Agency
Scotland School for Veteran's Children

Schuylkill County

Schuylkill County Board of Health
Schuylkill County Emergency Management Agency
Schuylkill County Emergency Medical Services
Schuylkill County Fire and Rescue Services
Schuylkill County Public Works
Schuylkill County Radiological Response Team
Schuylkill County Sheriff's Department
Pottsville Sheriff's Department
Pennsylvania Department of Transportation
Pennsylvania Department of Correction
Pennsylvania Emergency Management Agency
Pennsylvania State Police
U.S. Department of Agriculture-Extension Service

Schools

Cumberland County

West Shore School District
Red Mill Elementary School

Dauphin County

Central Dauphin School District
- Central Dauphin East High School

Derry Township School District
- Hershey Elementary School

Harrisburg School District
- Harrisburg High School

Lower Dauphin School District
- Lower Dauphin High School

Middletown Area School District
- Middletown High School

Milton Hershey School District
- Milton Hershey School

Steelton-Highspire School District
- Steelton-Highspire Elementary School

Lancaster County

Donegal School District
- Maytown Elementary School

Elizabethtown Area School District
- East High Street Elementary School

Lebanon County

Palmyra Area School District
- Palmyra Area High School

York County

Central York School District
- Hayshire Elementary School
- Roundtown Elementary School

Northeastern School District
- Northeastern Middle School
- Spring Forge Intermediate School

Dover Area School District
- Dover Intermediate School

Eastern York School District
- Kreutz Creek Elementary School

Private/Volunteer Organizations

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

Amateur Radio Emergency Services (ARES)
American Red Cross (ARC)
Civil Air Patrol
Radio Amateur Civil Emergency Services (RACES)
United Way

C. Exercise Timeline

Table 1, on the following page, presents the times at which key events and activities occurred during the Three Mile Island Nuclear Generating Station May 3, 2005 exercise. Also included are times notifications were made to the participating jurisdictions/functional entities.

TABLE 1. EXERCISE TIMELINE

Date and Site: May 3, 2005, Three Mile Island Nuclear Generating Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken										
		PA State EOC	EOF	JPIC Harrisburg	ENC Coatesville EOF	**Cumberland County EOC**	Lower Allen Twp. EOC	**Dauphin County EOC**	Harrisburg City EOC	Paxtang Boro. EOC	**Lancaster County EOC**	Conoy Twp
Unusual Event	1730	1736	N/A		N/A	1740	1806	1742	N/A		1734	
Alert	1814	1814	N/A	1813		1821	1826	1818	1823	1822	1814	1823
Site Area Emergency	2027	2033	2029	2029		2033	2045	2033	2051	2044	2033	2033
General Emergency	2102	2107	2103	2107		2111	2125	2111	2132	2128	2111	2120
Simulated Radiation Release Started		2130	2017	1900		2140	2140	1848	2217	2050		2120
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1815	1921			1845	1906	1851	1840	1850	1845	1845
Governor's Declaration of State of Emergency		2100		2100		2117	2214			N/A	2127	2140
Local Declaration of State of Emergency		N/A	N/A	N/A	N/A	2050	2052	1923	N/A	2040	N/A	N/A
Exercise Terminated		N/A	2248	2247		2232	2232	2247	2217	2200	2248	2248
Precautionary Actions:												
Restrict airspace		2040		2040			2117			N/A	2127	2040
Restrict rail traffic		2058		2058			2117			N/A	2127	2050
Restrict water traffic		2100		2100			2117			N/A		2100
Shelter livestock, place on stored feed		2100					2117	2111		N/A	2150	
1st A&N Decision (State [made]; local [received]) Tune radio/TV to EAS station							2059	N/A			2023	2025
Shelter: _____		2015	2135	2015								
Evacuate 360° to 10 miles							2219	N/A				N/A
1st Siren Activation		2025				2032		2025	2128	2116	2025	
1st EAS		2028										
2nd A&N Decision (State [made]; local [received]) Shelter:_____		2130				2131		2130	2132	2142	2130	2142
Evacuate 360° to 10 miles		2130				2131		2130		2142/ 2153	2130	2142
2nd Siren Activation		2140				2140		2144	2132	2144	2140	
2nd EAS Message		2143										
3rd A&N Decision (State [made]; local [received] Shelter: _____								N/A				
Evacuate 360° to 10 miles								N/A				
3rd Siren Activation								N/A				
3rd EAS Message												
KI Administration Decision: Emergency Workers advised to take KI												
Received at location		2130		2130		2128	2129	2126	2132	2134	2139	2145
Action taken at location						2128		2130			2142	2155
KI Administration Decision: Emergency Workers advised NOT to take KI								N/A				

TABLE 1. EXERCISE TIMELINE

Date and Site: May 3, 2005, Three Mile Island Nuclear Generating Station

Emergency Classification Level or Even	Time Utility Declared	Time That Notification Was Received or Action Was Taken									
		Lebanon County EOC	South Londonderry Twp. EOC	**York County EOC**	Dover Twp. EOC	Manchester Twp. EOC	Lewisbury Boro/ Newberry Twp EOC	Northeast Area EOC	Adams County EOC	Franklin County EOC	Schuylkill County EOC
Unusual Event	1730	1736		1735	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	1814	1826	1833	1817	1825	1827	1827	1827	1848	1841	1845
Site Area Emergency	2027	2033	2044	2033	2033	2043	2043	2043	2037	2058	2040
General Emergency	2102	2111	2215	2111	2121	2121	2121	2121	2118	2103	2119
Simulated Radiation Release Started		2033	2044	1848	2043	2043	2043	2043		1930	1922
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1920	1903	1827	1850	1855	1850	1856	1920	1915	1846
Governor's Declaration of State of Emergency		2122	2215	2130	2137	2137	2137	2137	2120	2122	2119
Local Declaration of State of Emergency		2199	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exercise Terminated		2247	2310	2226	2235	2235	2235	2235	2225	2243	2146
Precautionary Actions:											
Restrict airspace	2040	2137						2122	2122	2119	
Restrict rail traffic	2058	2137									
Restrict water traffic	2100	2137									
Shelter livestock, place on stored feed	2106	2137	2131	2136	2136	2136	2136				
1st A&N Decision (State [made]; local [received]) Tune radio/TV to EAS station		2022	2044	2032	2038	2038	2038	2030	N/A	N/A	N/A
Shelter: _____											
Evacuate 360° to 10 miles											
1st Siren Activation		2030		2028							
1st EAS											
2nd A&N Decision (State [made]; local [received])		2130	2138	2136	2136	2147	2147	2147	2147	2150	2145
Shelter: _____		2130			2136						
Evacuate 360° to 10 miles		2140									
2nd Siren Activation		2143		2140							
2nd EAS Message				2443							
3rd A&N Decision (State [made]; local [received]											
Shelter: _____											
Evacuate 360° to 10 miles											
3rd Siren Activation											
3rd EAS Message											
KI Administration Decision: Emergency Workers advised to take KI											
Received at location		2126	2144	2131	2154	2154	2154	2154			
Action taken at location				2154	2158	2158	2158	2158			
KI Administration Decision: Emergency Workers advised NOT to take KI											

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and locations that participated in the May 3-4, 2005, REP exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the Three Mile Island Nuclear Generating Station.

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

A. Summary Results of Exercise Evaluation

The matrix presented in Table 2, on the following pages, provides the status of the exercise evaluation area criteria from the FEMA REP Exercise Evaluation Methodology that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise evaluation area criteria are listed by number (reference "Section IV, Appendix 3, Exercise Evaluation Area Criteria and Extent-of-Play Agreement") and the demonstration status of the criteria is indicated by the use of the following letters:

M Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercises)

D Deficiency assessed

A ARCA(s) assessed

A[1] ARCA(s) assessed, but successfully redemonstrated

R Resolved ARCA(s) from prior exercise(s)

U Unresolved ARCA(s) from prior exercises

TABLE 2. SUMMARY RESULTS OF THE 2005 EXERCISE EVALUATION

Date and Site: May 3 and 4, 2005; Three Mile Island Nuclear Generating Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPERATIONS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT AND ANALYSIS					EMERGENCY NOTIFICATION & PUBLIC INFORMATION				SUPPORT OPERATION/ FACILITIES			
Criteria	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
1.0 COMMONWEALTH OF PENNSYLVANIA																																
1.1 State EOC (SEOC)	M	M	A[1]	M	M	M							M			M	M									M					M	
1.2 Joint Information Center (JIC)		M		M																								M				
1.3 Commonwealth Emergency News Information Center (CENIC)																										M			M				
1.4 Accident Assessment Center (SEOC/BRP)	M		M	M		M	M															M										
1.5 Accident Assessment Center EOF– Coatesville				M	M																											
1.6 State Field Monitoring Team A				M	M							M	M								M		M									
1.7 State Field Monitoring Team B				M	M							M	M								M		M									
1.8 State Traffic/Access Control Points*				M	M	M						M	M			M																
2.0 Risk Jurisdictions																																
2.1 Cumberland County																																
2.1.1 Cumberland County EOC	M	M	M	M	M	M			M			M	M	M	M											M			M				
2.1.2 Mon./ Decon. Reception and Mass Care Center – Shippensberg University*		M			A[1]							M	M																M		M	
2.1.3 EW Mon./ Decon. Center – West Shore Borough FS #13*		M			M							M	M																M	M		

* Conducted on May 4, 2005 as an Out-of-sequence Demonstration

A - ARCA(s) Assessed

M - Met (No Deficiency or ARCA(s) assessed)

U - Unresolved ARCA(s) from prior exercise(s)

A[1] - ARCA(s) assessed, but successfully redemonstrated

R- Resolved ARCA(s) from prior Exercise

Blank - Not scheduled for demonstration

D - Deficiency assessed

R[1]- Resolved ARCA from Peach Bottom Exercise

TABLE 2. SUMMARY RESULTS OF THE 2005 EXERCISE EVALUATION

Date and Site: May 3 and 4, 2005; Three Mile Island Nuclear Generating Station

OFFSITE RESPONSE ORGANZATION	EMERGENCY OPERATIONS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT AND ANALYSIS					EMERGENCY NOTIFICATION & PUBLIC INFORMATION				SUPPORT OPERATION/ FACILITIES			
Criteria	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
2.1.4 Lower Allen TWP EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.1.4.1 Route Alerting (Hearing Impaired) – Lower Allen TWP				M	M							M	M	M												M							
2.2 Dauphin County																																	
2.2.1 Dauphin County EOC	M	M	A[1], A	A[1]	M	M			M			M	M	M	M											M			M, R				
2.2.2 Reception Center – Williams Valley HS*		M			M							M	M																M			
2.2.3 Mon./ Decon. & Mass Care Center – Halifax HS*					M							M	M																M		M	
2.2.4 EW Mon./Decon Center – Harrisburg Area Community College*		M			M							M	M																M	M		
2.2.5 Harrisburg City EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.2.6 Paxtang Borough EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.2.6.1Route Alerting (Hearing Impaired) – Paxtang Borough				M	M							M	M	M												M							
2.3 Lancaster County																																	
2.3.1 Lancaster County EOC	M	M	M	M	M	M			M			M	M	M	M											M			M	M			
2.3.2 Reception Center – Park City Mall*		M			M							M	M																M			

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U - Unresolved ARCA(s) from prior exercise(s)

A[1] - ARCA(s) assessed, but successfully redemonstrated

R- Resolved ARCA(s) from prior Exercise

Blank - Not scheduled for demonstration

D - Deficiency assessed

R[1]- Resolved ARCA from Peach Bottom Exercise

TABLE 2. SUMMARY RESULTS OF THE 2005 EXERCISE EVALUATION

Date and Site: May 3 and 4, 2005; Three Mile Island Nuclear Generating Station

OFFSITE RESPONSE ORGANZATION	EMERGENCY OPERATIONS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT AND ANALYSIS					EMERGENCY NOTIFICATION & PUBLIC INFORMATION				SUPPORT OPERATION/ FACILITIES			
Criteria	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
2.3.3 Mon./ Decon. & Mass Care Center – Hempfield HS*		M			M							M	M																M		M	
2.3.4 EW Mon./ Decon. Center – Marietta FD*		M			M							M	M																M	M		
2.3.5 Conoy TWP EOC	M	M	M	M	M	M			M			M	M	M		M	M									A[1]							
2.3.5.1 Route Alerting (Hearing Impaired) – Conoy TWP				M	M							M	M	M												M							
2.4 Lebanon County																																	
2.4.1 Lebanon County EOC	M	M	A	M	M	M			M			M	M	M	M											M			M				
2.4.2 Reception Center – Lebanon County Career and Tech Center*		M			M							M	M																M			
2.4.3 Mon./Decon.& Mass Care Center – Northern Lebanon HS*		M			M							M	M																M		M	
2.4.4 Mon./ Decon. Center – Annville Union Hose FD*		M			M							M	M																M	M		
2.4.5 South Londonderry TWP EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.4.5.1 Route Alerting – South Londonderry Twp				M	M							M	M	M												M							
2.5 York County																																	
2.5.1 York County EOC	M	M	M	M	M	M			M			M	M	M	M											M			A				
2.5.2 Mon./ Decon. Reception & Mass Care Center*		M			M							M	M																R[1]		M	

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U - Unresolved ARCA(s) from prior exercise(s)

A[1] - ARCA(s) assessed, but successfully redemonstrated

R- Resolved ARCA(s) from prior Exercise

Blank - Not scheduled for demonstration

D - Deficiency assessed

R[1]- Resolved ARCA from Peach Bottom Exercise

TABLE 2. SUMMARY RESULTS OF THE 2005 EXERCISE EVALUATION

Date and Site: May 3 and 4, 2005; Three Mile Island Nuclear Generating Station

OFFSITE RESPONSE ORGANZATION	EMERGENCY OPERATIONS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT AND ANALYSIS					EMERGENCY NOTIFICATION & PUBLIC INFORMATION				SUPPORT OPERATION/ FACILITIES			
Criteria	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
2.5.3 EW Mon./ Decon. Center Monahan FD*		M			M							M	M																M	M		
2.5.4 Dover TWP EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.5.5 Manchester TWP	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.5.5.1 Route Alerting (Hearing Impaired) – Manchester TWP				M	M							M	M	M												M							
2.5.6 Lewisbury Borough/ Newberry TWP EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.5.7 Northeast Area EOC (Mt. Wolf & Manchester Boro. /E. Manchester TWP)	M	M	M	M	M	M			M			M	M	M		M	M									M							
3.0 Support Jurisdictions																																	
3.1 Adams County																																	
3.1.1 Emergency Operations Center	M	M	M	M	M																								M				
3.1.2 Mon./ Decon. Reception & Mass Care Center – Gettysburg MS*		M			M							M	M																R		R	
3.2 Franklin County																																	
3.2 Emergency Operations Center	M	M	M	M	M																								M				
3.2.2 Reception Center – Scotland School*		M			M							M	M																R		M	

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TABLE 2. SUMMARY RESULTS OF THE 2005 EXERCISE EVALUATION

Date and Site: May 3 and 4, 2005; Three Mile Island Nuclear Generating Station

OFFSITE RESPONSE ORGANZATION	EMERGENCY OPERATIONS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT AND ANALYSIS					EMERGENCY NOTIFICATION & PUBLIC INFORMATION				SUPPORT OPERATION/ FACILITIES			
Criteria	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
3.2.3 Mon./ Decon. & Mass Care Center – Chambersburg MS*		M			M							M	M																M		M	
3.3 Schuylkill County																																	
3.3.1 Emergency Operations Center	M	M	M	M	M																							M	M				
3.3.2 Reception Center – Blue Mountain HS*		M			M							M	M																M		M	
3.3.3 Mon./ Decon. & Mass Care Center – Pottsville MS*		M			M							M	M																M		M	
4.0 School Districts																																	
4.1 Cumberland County School Districts																																	
4.1.1 West Shore SD – Red Mill ES															M																		
4.2 Dauphin County School Districts																																	
4.2.1 Central Dauphin SD – Central Dauphin East HS															M																		
4.2.2 Derry TWP SD – Hershey ES															M																		
4.2.3 Harrisburg SD – Harrisburg HS															M, R																		
4.2.4 Lower Dauphin SD – Lower Dauphin HS															M																		
4.2.5 Middletown Area SD – Middletown HS															M																		
4.2.6 Milton Hershey SD – Milton Hershey School															M																		

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TABLE 2. SUMMARY RESULTS OF THE 2005 EXERCISE EVALUATION

Date and Site: May 3 and 4, 2005; Three Mile Island Nuclear Generating Station

OFFSITE RESPONSE ORGANZATION	EMERGENCY OPERATIONS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT AND ANALYSIS					EMERGENCY NOTIFICATION & PUBLIC INFORMATION				SUPPORT OPERATION/ FACILITIES			
Criteria	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
4.2.7 Steelton-Highspire SD – Steelton-Highspire ES															M																	
4.3 Lancaster County School Districts																																
4.3.1 Donegal SD – Maytown ES															M																	
4.3.2 Elizabethtown Area SD – East High Street ES															M																	
4.4 Lebanon County School Districts																																
4.4.1 Palmyra Area SD – Palmyra HS															M																	
4.5 York County School Districts																																
4.5.1.1 Central York SD – Hayshire ES															M																	
4.5.1.2 Central York SD – Roundtown ES															M																	
4.5.2.1 Northeastern SD – Northeastern MS															M																	
4.5.2.2 Northeastern SD – Spring Forge Intermediate															M																	
4.5.3 Dover Area SD – Dover Intermediate															M																	
4.5.4 Eastern SD – Kreutz Creek ES															M																	

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M - Met (No Deficiency or ARCA(s) assessed)

U - Unresolved ARCA(s) from prior exercise(s)

A^1 - ARCA(s) assessed, but successfully redemonstrated

R- Resolved ARCA(s) from prior Exercise

Blank - Not scheduled for demonstration

D - Deficiency assessed

R^1- Resolved ARCA from Peach Bottom Exercise

B. Status of Jurisdictions Evaluated

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

- Met – Listing of the demonstrated exercise evaluation area criteria under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.

- Deficiency – Listing of the demonstrated exercise evaluation area criteria under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.

- Area Requiring Corrective Actions – Listing of the demonstrated exercise evaluation area criteria under which one or more ARCAs were assessed during the current exercise. Included is a description of the ARCAs assessed during this exercise and the recommended corrective actions to be demonstrated before or during the next biennial exercise.

- Not Demonstrated – Listing of the exercise evaluation area criteria, which were not scheduled to be demonstrated during this exercise and the reason they were not demonstrated.

- Prior ARCAs – Resolved – Descriptions of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.

- Prior ARCAs – Unresolved – Descriptions of ARCAs assessed during prior exercises that were not resolved in this exercise. Included is the reason the ARCAs remain unresolved and recommended corrective actions to be demonstrated before or during the next biennial exercise.

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

- A Deficiency is defined in the Radiological Emergency Preparedness Program Manual as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- An Area Requiring Corrective action is defined as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

- A Plan Issue is defined as "…an observed or identified inadequacy in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance." Plan issues are not considered to be exercise issues.

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

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

- Plant Site Identifier – A two-digit number corresponding to the Utility Billable Plant Site Codes.

- Exercise Year – The last two digits of the year the exercise was conducted.

- Evaluation Area Criterion – A letter and number corresponding to the criteria in the FEMA Interim Radiological Emergency Preparedness Program Manual.

- Issue Classification Identifier – (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.

- Exercise Issue Identification Number – A separate two digit indexing number assigned to each issue identified in the exercise.

1.0 Commonwealth Of Pennsylvania

1.1 State Emergency Operations Center (SEOC)

a. **MET**: 1.a.1 2.a.1 3.b.1 5.a.1 6.c.1
1.b.1 3.d.1
1.d.1 3.d.2
1.e.1

b. **DEFICIENCY**: None

C. **AREAS REQUIRING CORRECTIVE ACTION**: 1.c.1

Issue No.: 64-05-1.c.1-A-01

Condition: The command staff at the State Emergency Operations Center (SEOC) did not coordinate with the command staff at the risk counties of Cumberland, Dauphin, Lancaster, Lebanon, and York the two activations of the public alert sirens and the content of the Emergency Alert System (EAS) messages.

Possible Cause: The Command Staff at the SEOC did not take into consideration the required coordination, as specified in State and County plans, prior to activating the alert and notification system.

Reference: NUREG-0654, A.1.d; A.2.a,b; Commonwealth of Pennsylvania Emergency Operations Plan, Annex E, Appendix 3, p. E-3-1.

Effect: Inadequate coordination of the alert and notification sequence could result in public confusion and inadequate implementation of county procedures, e.g. prompt protective actions for the general public and route alerting of special populations.

Recommendation: The SEOC staff should coordinate public alert and notification with all risk counties in accordance with State and County plans.

Corrective Action Demonstrated: All risk counties were contacted prior to the activation of the 2nd alert and notification (A&N).

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.2 Joint Public Information Center

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.3 Commonwealth Emergency News Information Center (CENIC)

a. **MET**: 5.a.1
5.b.1

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.4 Accident Assessment Center (SEOC/BRP)

a. **MET**: 1.a.1 2.a.1 4.a.2
1.c.1 2.b.1
1.d.1

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.5 Accident Assessment Center EOF – Coatesville

a. **MET**: 1.d.1
1.e.1

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.6 State Field Monitoring Team A

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.7 State Field Monitoring Team B

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

1.8 State Traffic/Access Control Points

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.0 Risk Jurisdictions

2.1 Cumberland County

2.1.1 Cumberland County Emergency Operations Center

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.1.2 Monitoring/Decontamination Reception and Mass Care Center – Shippensberg University

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

b. **DEFICIENCY**: None

c. **AREAS REQUIRING CORRECTIVE ACTION**: 1.e.1

Issue No.: 64-05-1.e.1-A-02

Condition: Documentation of the current calibration of the ADM-300A Serial Number 892085 survey instrument was not available at the time the instrument was prepared for use. This instrument is used to monitor contaminated evacuees. There was a calibration expiration date of 3/8/02 listed on the instrument. It was shown that the APTEC-NRC calibration fixture Model GCF-200(V2) could be calibrated without being sent back to the manufacturer. However, there was no documentation that this calibration had been performed using the calibration fixture.

Possible Cause: Only an operability check is mentioned in the procedures for monitoring. The operator is not reminded of the requirement for the instrument to have a current calibration when used.

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

Effect: While the instruments passed the operability check, an uncalibrated instrument may not provide accurate results.

Recommendation: Modify the procedure to include a check of the calibration date of the instruments being used. Provide a procedure for the performance of the instrument calibration. Schedule the performance annually or as required by the manufacturer and maintain documentation of these calibrations with the instrument.

Corrective Action Demonstrated: The Supervisor described the calibration process and showed the sources used for the calibration, thus simulating the calibration of the instrument.

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.1.3 Emergency Worker Monitoring/Decontamination Center – West Shore Borough FS #13

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.1.4 Lower Allen Township Emergency Operations Center

a. **MET**: 1.a.1 2.a.1 3.a.1 5.a.1
1.b.1 2.c.1 3.b1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.1.4.1 Route Alerting (Hearing Impaired) – Lower Allen Township

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2.2 Dauphin County

2.2.1 Dauphin County Emergency Operations Center

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

b. DEFICIENCY: None

C. AREAS REQUIRING CORRECTIVE ACTION: 1.c.1, 1.d.1

Issue No.: 64-05-1.c.1-A-03

Condition: The Dauphin County Emergency Operations Center (EOC) failed to promptly provide the Paxtang Borough EOC with information about the initial alert and notification decision and the need to initiate Route Alerting. At 2025, the Dauphin County 911 Communications Center Supervisor received a message from the Pennsylvania Emergency Management Agency (PEMA) EOC instructing risk counties to simulate the activation of the sirens at 2025 and indicating that PEMA would issue the appropriate Emergency Alert System (EAS) message at 2028. However, this information was not received at the Paxtang Borough EOC until 2116 via facsimile.

Possible Cause: The significant delay that occurred in the process of handling a critical message from the moment the message was received to the moment the information was effectively provided to the Paxtang Borough EOC appears to have resulted from a failure to verify that critical information had been effectively received by the risk municipalities. The Dauphin County EOC Planning Section Coordinator's checklist includes the item "Verify Route Alerting Conducted" as part of the items subject to verification during a Site Area Emergency (SAE) Emergency Classification Level (ECL), but does not include such an item under the Alert ECL section. However, the PEMA EOC made the initial alert and notification decision during the Alert ECL.

Reference: NUREG-0654, II-E.1; Dauphin County Radiological Emergency Response Plan, Basic Plan, Section 6.D (5).

Effect: The failure on the part of the Dauphin County EOC to provide adequate warning to the Paxtang Borough EOC prevented them from conducting backup route alerting in a timely manner.

Recommendation: Dauphin County Emergency Management Agency (EMA) should revise its procedures to ensure that the timeliness of conveying critical information to the municipalities is verified promptly so that corrective actions can be implemented, if necessary.

Corrective Action Demonstrated: During the 2nd alert and notification (A&N) sequence, the Dauphin County EOC provided the information to the Paxtang Borough EOC to initiate route alerting in a timely manner.

Issue No.: 64-05-1.d.1-A-04

Condition: The dedicated telephone line that connects the Pennsylvania Emergency Management Agency (PEMA) Emergency Operations Center (EOC), the utility, and the EOCs in all risk counties did not ring at the Dauphin County EOC at approximately 2130, when PEMA engaged all jurisdictions in a conference call to coordinate the activation of the alert and notification (A&N) system (i.e., activation of sirens and broadcast of Emergency Alert System (EAS) messages) to implement the evacuation order issued by the Governor. The PEMA EOC was able to contact the Dauphin County Emergency Management Agency (EMA) by reaching its 911 Communications Center Supervisor and conveying the information concerning the time established for activation of the sirens.

Possible Cause: The wiring for the dedicated telephone line that connects the PEMA EOC, the utility, and the EOCs in all risk counties failed in the Dauphin County EOC when the call came in for the conference call that started at approximately 2130.

Reference: NUREG-0654, II.F.1.d; Dauphin County Radiological Emergency Response Plan, Basic Plan, Section 5.D (Concept of Operations).

Effect: A failure of the dedicated telephone line affects Dauphin County EMA's ability to effectively engage in coordination with PEMA, the utility, and other risk jurisdictions regarding implementation of protective actions.

Recommendation: The Dauphin County EMA should coordinate with PEMA and the utility to verify what type of equipment malfunction occurred in the dedicated telephone line in Dauphin County during the exercise. Once the exact source of the malfunction is identified, it should be corrected and tested.

Corrective Action Demonstrated: On May 5, 2005, the Dauphin County EMA Deputy Director explained that a wiring defect was detected on the dedicated telephone line. That same day, the wiring for that line was replaced, and the line was successfully tested.

Issue No.: 64-05-5.b.1-A-05

Condition: The press release regarding the Health Department's recommendation for administration of potassium iodide (KI) issued by the Dauphin County Emergency Operations Center (EOC) Public Information Officer (PIO) with a time of 2023 only made reference to emergency workers and special populations and did not address the fact that the recommendation covered the general public as well.

Possible Cause: The template for the press release regarding the Health Department's recommendation for administration of KI used by the PIO is apparently outdated and corresponds to a time when the general public was not issued KI.

Reference: NUREG-0654, II.G.1.c; Dauphin County Radiological Emergency Response Plan, Basic Plan, Section 6.D (27).

Effect: The general public could be confused as a result of the inconsistency between the messages issued by the Pennsylvania Emergency Management Agency (PEMA) and the Dauphin County regarding the Health Department's recommendation for administration of KI. PEMA's press release made reference to the fact that the recommendation was applicable to the general public, while that reference was omitted from the press released prepared by the Dauphin County EOC PIO.

Recommendation: The Dauphin County EMA should revise the template used for notification to the public of the Health Department's recommendation for administration of KI to ensure that it makes reference to the general public. The training of the Dauphin County EOC PIO should address this revised template.

Schedule for Corrective Action: The referenced press release at 2023 only applied to special populations and emergency workers. At 2126 the Dauphin County PIO did send out a press release declaring a General Emergency and advising the general public to take KI (see enclosed press releases.) We do not, as a rule, make a decision on KI for the general public until after General Emergency is declared. The General Emergency was not declared by the utility until 2102. The ~~2030~~ 2023 press release cited above was released before any decision had been made or considered by the State concerning KI for the general public. The utility had not even provided a recommendation by ~~2030~~ 2023. This ARCA should be deleted.

FEMA Response: Concur. This ARCA is deleted.

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: 5.b.1

Issue No.: 64-03-5.b.1-A-04

Description: A News Release, issued at 5:34 PM, provided contradictory and misleading information regarding whether an Alert or a Site Area Emergency (SAE) Emergency Classification Level (ECL) had been declared. (NUREG-0654, E.5,7; G.3.a; G.4.c)

Corrective Action Demonstrated: All the press releases generated by the Dauphin County Emergency Operations Center (EOC) Public Information Officer (PIO) contained the correct ECL, as appropriate.

f. **PRIOR ARCAs – UNRESOLVED**: None

2.2.2 Reception Center – Williams Valley HS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.2.3 Monitoring/Decontamination and Mass Care Center – Halifax HS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.2.4 Emergency Worker Monitoring/Decontamination Center – Harrisburg Area Community College

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

b. **DEFICIENCY**: None

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

Issue No.: 64-05-1.b.1-A-06

Condition: The present facility layout has not been adequately designed to control contamination of emergency workers (EWs) and their vehicles at the Radiological Monitoring and Decontamination Station, North Hall, Harrisburg Area Community College, Harrisburg, PA. The facility layout does not contain a flow layout for EW vehicle monitoring and decontamination, and the shower room walls do not completely touch the floors in the shower rooms, resulting in potentially contaminated run-off water spreading around the entire shower room floor. Additionally, the entrance and egress corridor from the shower room is not wide enough to permit two persons to pass.

Possible Cause: The facility is inadequate as a decontamination facility.

Reference: NUREG-0654, H.3

Effect: The lack of a facility layout caused delays in processing EW vehicles for monitoring and decontamination of the vehicle and possible cross-contamination in the shower rooms (male and female) of emergency workers.

Recommendations: The ERT, Dauphin County, and Exelon Nuclear should re-examine this facility for its intended purpose.

Schedule for Corrective Action: This same facility and layout has been used consistently since 1999. In the 1999, 2001, and 2003 biennial exercises there was not a single issue noted by the evaluators. Nevertheless, procedures will be developed to resolve the remote possibility of contamination in the showers and a flow chart lay-out will be created for EW vehicles. Recommend that this issue be changed from an ARCA to a planning issue. It at most was "an observed or identified inadequacy in the ORO's emergency plan or

implementing procedures, rather than in the ORO's performance," which is exactly how a planning issue is defined.

FEMA Response: Concur. This ARCA is now reclassified as a planning issue.

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.2.5 Harrisburg City Emergency Operations Center

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.2.6 Paxtang Borough Emergency Operations Center

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

b. **DEFICIENCY**: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

Issue No.: 64-05-5.a.1-A-07

Condition: During the second alert and notification (A&N) sequence, the Paxtang Borough EOC activated their own fire siren (2145) as a public alerting method one minute after the Dauphin County siren activation (2144). This activity is not in accordance with the Paxtang Borough plans and procedures.

Possible Cause: During the first A&N sequence, the Paxtang Borough EOC did not receive notification from the Dauphin County Emergency Management Agency (EMA) of the siren activation for 51 minutes. The Paxtang Borough Emergency Management Coordinator (EMC) believed that the sounding of the borough siren would ensure that the public would be promptly notified of an impending Emergency Alert System (EAS) message.

Reference: NUREG-0654, E.5,6,7

Effect: The Paxtang Borough's fire siren sounding may cause public confusion.

Recommendation: The Paxtang EOC should not activate their fire siren during an A&N sequence unless requested to do so by the Dauphin County EMA, or, include the Paxtang Borough siren activation in conjunction with the Dauphin County siren activation in the Paxtang Borough and County plans and procedures.

Schedule for Corrective Action: The sounding of the Paxtang Borough fire siren during the second A&N sequence was a direct result of the communication problems between the SEOC and Dauphin County during the first A&N sequence. Even though it was not in his plan, the borough coordinator, in the interest of public safety, made a conscious decision to sound his fire sirens as a back-up or alternative in the event there would have been another delay. As such it could be argued that he exhibited commendable decision making and command and control. Regardless, this borough siren sounding would not have had a deleterious effect on public safety or caused public confusion. Regardless of which sirens sound the result is the same – residents tune into their local stations for emergency information. To say that a municipal siren sounding during an event at a nuclear power plant is a detriment implies the sirens should not be blown for a fire or any other emergency during this period. That, of course, would be a totally unworkable rule. The real problem here was at the State and county level and that has already been addressed in this report. Nothing is to be gained by second guessing the actions of a local coordinator who made a real-time decision to do what he felt was best for his citizens. The goal of the exercise was to prove mission accomplishment. That was done. There is no need to make a plan

change. This was an immediate action to mitigate a perceived problem – the very essence of emergency management. Recommend this ARCA be deleted.

FEMA Response: Concur. This ARCA is deleted.

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2.2.6.1 Route Alerting (Hearing Impaired) – Paxtang Borough

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

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2.3 Lancaster County

2.3.1 Lancaster County Emergency Operations Center

a. MET: 1.a.1 1.b.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 5.a.1 5.b.1 6.a.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.3.2 Reception Center – Park City Mall

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.3.3 Monitoring/Decontamination and Mass Care Center – Hempfield HS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.3.4 Emergency Worker Monitoring/Decontamination Center – Marietta FD

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.3.5 Conoy Township Emergency Operations Center

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

b. **DEFICIENCY**: None

c. **AREAS REQUIRING CORRECTIVE ACTION**: 5.a.1

Issue No.: 64-05-5.a.1-A-08

Condition: The Conoy Township Emergency Operations Center (EOC) failed to deploy their Primary Route Alerting Teams in response to the first Alert and Notification (A&N) sequence.

At 2033, Conoy Township was notified of an Alert Condition at the Three Mile Island Nuclear Site. That notification included a report that sirens were being activated at 2025. Prompt alert and notification of the public required the Conoy County EOC to deploy Primary Route Alerting Teams to notify the public of the Alert Emergency Classification Level (ECL) and to listen for additional Emergency Alert System (EAS) messages. The Primary Route alerting personnel had received their radiological briefing in the EOC and were ready for deployment but were never dispatched.

Possible Cause: Lack of familiarity with the Conoy Township Emergency Operations Plan (EOP).

Reference: Conoy Township Emergency Operations Plan, page B-2, paragraph B.3.1, "if sirens are activated, commence route alerting…"

Effect: During the first A&N sequence, members of the public were not adequately notified of the emergency situation and the need to monitor the EAS. This is particularly true for special needs populations (hearing impaired, etc.) who may be dependent on route alerting for initial notification.

Recommendation: Review the Conoy Township EOP and ensure check lists are updated to reflect timely dispatch of Route Alerting Teams upon siren activation. Conduct training with the EOC staff to ensure they understand there

is no need to wait for the Lancaster County EOC to direct dispatch of Route Alerting Teams after sirens have sounded.

Corrective Action Demonstrated: At the second A&N sequence at 2102, upon notification of a General Emergency (GE), the Primary Route Alerting Teams were correctly dispatched and successfully demonstrated their activities associated with primary alerting and notification of the public in a complete and timely manner.

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.3.5.1 Route Alerting (Hearing Impaired) – Conoy Township

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.4 Lebanon County

2.4.1 Lebanon County Emergency Operations Center

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

b. **DEFICIENCY**: None

c. AREAS REQUIRING CORRECTIVE ACTION: 1.c.1

Issue No.: 64-05-1.c.1-A-09

Condition: Briefings to the Emergency Operations Center (EOC) staff by the Emergency Management Coordinator (EMC) did not provide detailed briefings and did not encourage staff participation in the exchange of information pertaining to their activities. Emergency information posted to the EOC status board contained incorrect information and was not recorded in a timely manner. Event log entries were not checked for spelling or context (i.e. evacuation of non-essential personnel at Three Mile Island (TMI) was entered as Partial Evacuation of TMI non-residential). Entries into the log were delayed by up to one hour. For example, the 2040 Federal Aviation Administration (FAA) restrictions were entered at 2150. The restriction on rail services at 2050 was entered at 2150.

Possible Cause: The EMC did not properly assign responsibilities to his staff as specified in the plan.

Reference: NUREG-0654, A.1.d; A.2a,b

Effect: Staff was unaware of certain activities being conducted by the State, which may have influenced their response efforts.

Recommendation: The EMC should delegate authority to the EOC staff and prioritize managing the county response.

Schedule for Corrective Action: Agreed. This was an entirely new staff involved in their first nuclear power plant exercise. Improvement will continue to grow through experience and training.

Issue No.: 64-05-3.c.2-A-10

Condition: During the out-of-sequence (OOS) school demonstration on May 3, 2005, no notifications had been received at the Palmyra School District Office as of 1000 from the Lebanon County Emergency Operations Center (EOC) dispatch center. After calling the EOC district office, it was learned that the EOC was not aware that its participation during OOS school demonstrations was required. After being made aware of this need, the EOC provided the exercise messages, including those prior to 1000. Although all messages were received, messages for the Alert and Site Area Emergency (SAE) were received at a time significantly later than that in the exercise timeline and created some confusion during the demonstration.

Possible Cause: Lack of coordination and detailed procedures for the school services EOC liaison to contact the Palmyra School District Office during an emergency event.

Reference: NUREG-0654, J.10.c,d,g; Lebanon County Plan, Appendix 14, Annex E, School Services.

Effect: School officials may not be able to implement protective actions for students to prevent them from returning into the 10-mile EPZ during an event.

Recommendation: EOC procedures for the school services outlining their specific roles during an emergency should be fully demonstrated in accordance with the plans and procedures.

Schedule for Corrective Action: The simple fact of this issue is that the county was unaware that they had to forward messages to the school district office. This is as much a fault of the exercise developers as it was a new county EMA staff. Obviously the county is well aware that in the future they are to forward all messages during school exercises. It is hard to see what benefit is gained by even bothering to make this an issue or call it an ARCA. The problem was corrected on the spot during the exercise and there is simply no training or other corrective actions that can take place that will further improve anyone's understanding. Furthermore, as evidenced by the lack of any issues for Palmyra School District, the lateness of the first few messages had no detrimental effect on the district's mission accomplishment. Recommend this ARCA be deleted.

FEMA Response: Concur. This ARCA is deleted.

Issue No.: 64-05-5.b.1-A-11

Condition: The Reception Center identified in the 2005 Verizon telephone directory (Yellow Pages) emergency information insert is not the Reception Center identified in the county plan or in the Pennsylvania Emergency Management Agency (PEMA) Emergency Alert System (EAS) message.

Possible Cause: There was no review of the phone directory insert prior to publication.

Reference: NUREG-0654, E.5, 7; G.3.a; G.4.c; Lebanon County Plan, Reception Center identified in Appendix 12, p. E-12-5, Appendix 4, p. E-9.

Effect: The public was being instructed to refer to the telephone directory throughout the event. When PEMA issued the EAS message recommending evacuation, they identified the correct center. This variance in facilities may have caused confusion among the public.

Recommendation: Update telephone book.

Schedule for Corrective Action: Again, this was "an observed or identified inadequacy in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance," which is exactly how a planning issue is defined. Additionally, the utility, not the county, writes the telephone directory emergency procedures. This is most definitely not an ORO performance issue. If it is then there is no such thing as a planning issue. The telephone directories will be fixed when the next version is published. This issue should be reclassified as a planning issue.

FEMA Response: Concur. This ARCA has been reclassified as a planning issue.

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.4.2 Reception Center – Lebanon County Career and Tech Center

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.4.3 Monitoring/Decontamination and Mass Center – Northern Lebanon HS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.4.4 Monitoring /Decontamination Center – Annville Union Hose FD

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.4.5 South Londonderry Township Emergency Operations Center

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.4.5.1 Route Alerting – South Londonderry Township

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.5 York County

2.5.1 York County Emergency Operations Center

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

b. **DEFICIENCY**: None

c. **AREAS REQUIRING CORRECTIVE ACTION**: 5.b.1

Issue No.: 64-05-5.b.1-A-12

Condition: The Public Information Officer (PIO) neglected to include the necessary information in follow-on messages, such as evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, public inquiry telephone number, etc. Information regarding the Governor's order advising recommendation of evacuation was also inaccurate.

Possible Cause: The newly assigned PIO was not supplied with the appropriate templates that the previous PIO had and the Emergency Alert System (EAS) messages that might have contained some of this information that never reached the York County EOC from the Pennsylvania Emergency Management Agency (PEMA) in written form.

Reference: NUREG-0654, E.5, 7

Effect: If the necessary information for a safe and efficient evacuation and relocation of the public was broadcast, it would have caused confusion.

Recommendation: Templates contained in the plans and procedures should be updated to assure that they contain current and accurate necessary information. These templates should then be forwarded to the PIO. As the PIO is new to this position, some additional training and guidance might also be helpful.

Schedule for Corrective Action: Agreed. York County is in the process of updating and rewriting their templates for the PIO. Additional training will be provided in their implementation and use.

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.5.2 Monitoring/Decontamination Reception and Mass Care Center – Southern School Complex

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: 6.a.1

Issue No.: 46-04-6.a.1-A-01
(This ARCA was a result of the Peach Bottom 2004 Exercise)

Description: Evacuees exiting the shower rooms used the same floor area which was previously used by contaminated individuals. There were no floor diagrams, which would show the clean versus contaminated evacuees' traffic pattern. Clean evacuees exiting shower rooms could be contaminated again by using the same floor area as contaminated evacuees. (NUREG-0654, J.12)

Corrective Action Demonstrated: The procedures for the York County Evacuee Monitoring, Decontamination, and Mass Care facility have been changed to clearly delineate the traffic pattern for clean versus contaminated individuals. The entrance/exit area to the showers has been divided in half and

clearly marked with a combination of portable barriers and tape. An individual is also stationed at the exit/entrance area to assure that evacuees stay on the appropriate side of the barriers.

This new process was successfully demonstrated on May 04, 2005 as part of a TMI exercise out-of-sequence demonstration.

f. PRIOR ARCAs – UNRESOLVED: None

2.5.3 Emergency Worker Monitoring/Decontamination Center – Monahan FD

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

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2.5.4 Dover Township Emergency Operations Center

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

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2.5.5 Manchester Township

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.5.5.1 Route Alerting (Hearing Impaired) – Manchester Township

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

2.5.6 Lewisbury Borough/Newberry Township EOC

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

b. **DEFICIENCY**: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2.5.7 Northeast Area Emergency Operations Center (Mt. Wolf & Manchester Borough /East Manchester Township)

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

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

3.0 Support Jurisdictions

3.1 Adams County

3.1.1 Adams County Emergency Operations Center

a. MET: 1.a.1 5.b.1
1.b.1
1.c.1
1.d.1
1.e.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

3.1.2 Monitoring/Decontamination Reception and Mass Care Center – Gettysburg MS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: 6.a.1, 6.c.1

Issue No.: 64-99-18-A-42 (6.a.1)

Description: The radiological monitors at the Adams County monitoring/ decontamination/mass care center (Gettysburg Area Middle School) did not wear or simulate wearing gloves while surveying individuals and vehicles for contamination, as required by Appendix 5, page E-36, of the Adams County EOP. (NUREG-0654, J.12)

Corrective Action Demonstrated: The emergency workers wore gloves during radiological monitoring.

Issue No.: 64-03-6.a.1-A-08 (Monitoring/Decontamination, Reception, and Mass Care Center – New Oxford Middle School)

Description: Personnel changed the alarm set point for contamination on \the Bicron portal monitor. A person is considered contaminated if there is a reading of 18,000 counts/second (cps) using the Bicron TPM-903 portal monitor. This action limit was derived from the 300 counts/minute (cpm) contamination threshold utilized for monitoring with a CDV-700 (300 cpm x 60 seconds/minute = 18000 cps). The contamination limit may be too high and should not be calculated using this method due to the differences in detector efficiency and sensitivity. (NUREG-J.10.h; J.12; K.5.a)

Commonwealth Recommendation: The same portal monitor and same HAZMAT team that would have been used at New Oxford Middle School are the same ones that were successfully evaluated at Gettysburg Middle School during the 2005 exercise. Adams County only possesses one portal monitor, so the

location it is set up at should not matter as long as the set point is correct and the portal monitor is properly operated.

FEMA Response: Concur. This Prior ARCA was correctly demonstrated during this 2005 exercise and is resolved.

Issue No.: 64-99-19-A-43 (6.c.1)

Description: The ARC Manager for the Adams County mass care center, located in the Gettysburg Area Middle School, was not knowledgeable in all aspects of the requirements for this center (e.g., capacity of the center, how many evacuees to expect, and if procedures are available for exceeding the capacity of the center). (NUREG-0654, J.10.h)

Corrective Action Demonstrated: The ARC Mass Care Center manager was extremely knowledgeable about the facilities capabilities and resources.

f. PRIOR ARCAs – UNRESOLVED: None

3.2 Franklin County

3.2.1 Franklin County Emergency Operations Center

a. MET: 1.a.1 5.b.1
1.b.1
1.c.1
1.d.1
1.e.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

3.2.2 Reception Center – Scotland School

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

b. DEFICIENCY: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: 6.a.1

Issue No.: 64-03-6.a.1-A-09

Description: The Reception Center was not set-up in accordance with the extent-of-play agreement and/or the Franklin County Plan, (Appendix 3 Reception Center Operations), for demonstration of the facilities capabilities. The extent-of-play from PEMA reads…"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, with the exception of long runs of plastic covered with paper which will not be demonstrated…" In order for this facility to become operational in accordance with the Plan and the extent-of-play agreement prior to evacuees arriving, the following steps should be performed (not all inclusive): vehicle and people traffic flow patterns should be established in order to ensure that the spread of contamination can be controlled utilizing such items as cones, stanchions, rope, tape, plastic sheeting, rolls of paper, and step-off pads etc; receptacles for contaminated waste should be available; and an area to separate contaminated from non-contaminated individuals should be established; and evacuee processing should be controlled when each individual is moving from one stop-point to another. (NUREG-0654, J.10.h; J.12; K.5.a)

Corrective Action Demonstrated: The reception center set-up and operation was demonstrated in an outstanding manner in accordance with established guidelines. Vehicle and personnel traffic flow patterns were clearly established and effectively demonstrated utilizing signs, cones, stanchions, and tape. Receptacles for contaminated waste were available, and contaminated personnel were kept separated from other evacuees. The staff was well trained and performed outstandingly.

f. **PRIOR ARCAs – UNRESOLVED**: None

3.2.3 Monitoring/Decontamination and Mass Care Center – Chambersburg MS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

3.3 Schuylkill County

3.3.1 Schuylkill County Emergency Operations Center

a. **MET**: 1.a.1 5.a.1 6.a.1
1.b.1
1.c.1
1.d.1
1.e.1

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

3.3.2 Reception Center – Blue Mountain HS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

3.3.3 Monitoring/Decontamination and Mass Care Center – Pottsville MS

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

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.0 School Districts

4.1 Cumberland County School Districts

4.1.1 West Shore SD – Red Mill ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.2 Dauphin County School Districts

4.2.1 Central Dauphin SD – Central Dauphin East HS

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.2.2 Derry Township SD – Hershey ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.2.3 Harrisburg SD – Harrisburg HS

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: 3.c.2

Issue No.: 64-03-3.c.2-A-12 – Harrisburg School District – Foose Elementary School

Description: Parents of children attending schools in the Harrisburg School District have not been informed of the plan or provided information as to where to pick up their children if they are sheltered or evacuated. (NUREG-0654 J.10.c, d, g)

Commonwealth Recommendation: This ARCA was successfully demonstrated during the 2005 exercise and should be deleted. The letter to parents was mailed in September 2004 at the beginning of the school year from the school district office which was evaluated during the out-of-sequence demonstration. The letter is displayed as Appendix 4, page 4-1 of the Harrisburg School District Emergency Evacuation Plan dated February 2005. A copy of this was provided to FEMA.

The fact that Foose Elementary School was not evaluated during this exercise does not mean this ARCA cannot be deleted. Foose Elementary School was not responsible for the issue. The school district was and they successfully proved they had remedied the problem during this exercise.

FEMA Response: Concur. This Prior ARCA is deemed corrected.

f. PRIOR ARCAs – UNRESOLVED: None

4.2.4 Lower Dauphin SD – Lower Dauphin HS

a. MET: 3.c.2

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

4.2.5 Middletown Area SD – Middletown HS

a. MET: 3.c.2

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

4.2.6 Milton Hershey SD – Milton Hershey School

a. MET: 3.c.2

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.2.7 Steelton-Highspire SD – Steelton-Highspire ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.3 Lancaster County School Districts

4.3.1 Donegal SD – Maytown ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.3.2 Elizabethtown Area SD – East High Street ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.4 Lebanon County School Districts

4.4.1 Palmyra Area SD – Palmyra HS

a. **MET**: None

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.5 York County School Districts

4.5.1 Central York SD

4.5.1.1 Central York SD – Hayshire ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.5.1.2 Central York SD – Roundtown ES

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.5.2 Northeastern SD

4.5.2.1 Northeastern SD – Northeastern MS

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.5.2.2 Northeastern SD – Spring Forge Intermediate

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.5.3 Dover Area SD – Dover Intermediate

a. **MET**: 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

4.5.4 Eastern SD – Kreutz Creek ES

a. **MET:** 3.c.2

b. **DEFICIENCY**: None

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

d. **NOT DEMONSTRATED**: None

e. **PRIOR ARCAs – RESOLVED**: None

f. **PRIOR ARCAs – UNRESOLVED**: None

APPENDIX 1. ACRONYMS AND ABBREVIATIONS

The following is a list of the acronyms and abbreviations used in this report.

A&N	Alert and Notification
AAC	Accident Assessment Center
ACP	Access Control Point
ALARA	As Low As Reasonably Achievable
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Service
ATL	Alternate Team Leader
BRP	Bureau of Radiation Protection
CENIC	Commonwealth Emergency News Information Center
CFR	Code of Federal Regulations
cpm	Counts per Minute
cps	Counts per Second
Decon.	Decontamination
DRD	Direct-Reading Dosimeter
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMC	Emergency Management Coordinator
EMS	Emergency Medical Service(s)
EMT	Emergency Medical Technician
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operating Plan
ES	Elementary School
EPLO	Emergency Preparedness Liaison Officer
EPZ	Emergency Planning Zone
ERT	Emergency Response Team
EW	Emergency Worker
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FR	Federal Register
FRERP	Federal Radiological Emergency Response Plan
GE	General Emergency

HazMat	Hazardous Materials
HS	High School
ICF	ICF Consulting
JPIC	Joint Public Information Center
KI	Potassium iodide
Mon.	Monitoring
mR/h	milliroentgen(s) per hour
MS	Middle School
msl	Mean sea level
MW	Megawatt
NLT	No Later Than
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, November 1980
OOS	Out-of-sequence
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guidelines
PAR	Protective Action Recommendation
PEMA	Pennsylvania Emergency Management Agency
PIO	Public Information Officer
PRD	Permanent Record Dosimeter
PSP	Pennsylvania State Police
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RadOff	Radiological Officer
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RO	Radiological Officer
SAE	Site Area Emergency
SD	School District
SEOC	State Emergency Operations Center
SOP	Standard Operating Procedure(s)
TCP	Traffic Control Point

TL	Team Leader
TMI	Three Mile Island
TSC	Technical Support Center
TWP	Township
USDA	United States Department of Agriculture

APPENDIX 2. EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Three Mile Island (TMI) Nuclear Power Station Out-of-Sequence activities on May 3 & 4, and exercise on May 3, 2005. Evaluator Team Leaders are indicated by the letters "(TL)" after the organization name. The organization each evaluator represents is indicated by the following abbreviations:

FEMA	Federal Emergency Management Agency
NRC	U.S. Nuclear Regulatory Commission
ICF	ICF Consulting

Position	Name	Organization
RAC Chairperson	Darrell Hammons	FEMA
Project Officer	Al Henryson	FEMA
ICF Coordinator	Roger B. Kowieski	ICF

I. BIENNIAL PLUME EXERCISE – May 3, 2005

Evaluation Site	Evaluator	Organization
Commonwealth of Pennsylvania		
State Emergency Operations Center	Angela Hough	FEMA (TL)
	Bob Duggleby	ICF
	Bill Wark	ICF
Joint Public Information	Anita Kellogg	ICF
Emergency News Center (EOF Coatesville)	Ken Lott	ICF
Accident Assessment Center (State EOC/BRP)	Harry Harrison	ICF (Tech TL)
Accident Assessment Center (EOF Coatesville)	Bob Bores	NRC
State Field Air Monitoring Team A	Lyle Slagle	ICF
State Field Air Monitoring Team B	Bill Neidermeyer	ICF
State Traffic/Access Control Points*	Mack Lake	ICF
	Stephen Mc Grail	ICF
Risk Jurisdictions		
Cumberland County		
Cumberland County EOC	Chris Thompson	FAA (TL)
	Roy Smith	ICF
	Jim Lightner	ICF
Mon./Decon., Reception & Mass Care Center (Shippensberg University)*	Rowena Argall	ICF

*Evaluated out-of-sequence on May 4, 2005.

Evaluation Site	Evaluator	Organization
Emergency Worker Mon./Decon. Center (West Shore Borough FS #13)*	Art Ball	ICF
Lower Allen Township EOC	Glenn Kinnear	ICF
Route Alerting (Hearing Impaired) (Lower Allen Township)	Bart Freeman	FEMA
Dauphin County		
Dauphin County EOC	John Price	FEMA (TL)
	Alejandro Fernandez	ICF
	Bill Vocke	ICF
Reception Center (Williams Valley HS)*	John Flynn	ICF
Mon./Decon. & Mass Care Center (Halifax HS)*	Hollis Berry	ICF
Emergency Worker Mon./Decon. Center (Harrisburg Area Community College)*	Lynn Mariano	ICF
Harrisburg City EOC	Mike Meshenberg	ICF
Paxtang Borough EOC	Paul Neid	ICF
Route Alerting (Hearing Impaired) (Paxtang Borough)	Landton Malone	FEMA
Lancaster County		
Lancaster County EOC	Kevin Keyes	FEMA (TL)
	Bob Rospenda	ICF
	Steve Lowery	ICF
Reception Center (Park City Mall)*	Bud Iannazzo	ICF
Mon./Decon. & Mass Care Center (Hempfield HS)*	David Schweller	ICF
Emergency Worker Mon./Decon. Center Marietta FD*	Bart W. Ray	ICF
Conoy Township EOC	Patrick Twiss	FEMA
Route Alerting Team (Hearing Impaired) (Conoy Township)	Richard Smith	ICF
Lebanon County		
Lebanon County EOC	Pat Tenorio	FEMA (TL)
	Frank Bold	ICF
	Jon Christiansen	ICF
Reception Center (Lebanon County Career & Tech Center)*	Jim Willison	ICF
Mon./Decon. & Mass Care Center (Northern Lebanon HS)*	Dave Stuenkel	ICF
Emergency Worker Mon./Decon. Center (Annville Union Hose FD)*	Stan Maingi	ICF
South Londonderry Township EOC	David Duncan	ICF
Route Alerting (South Londonderry Township)	Laurel Ryan	FEMA

*Evaluated out-of-sequence on May 4, 2005.

Evaluation Site	Evaluator	Organization
York County		
York County EOC	Ken Wierman	FEMA (TL)
	Nancy Johnson	ICF
	Gary Goldberg	ICF
Mon./Decon., Reception & Mass Care Center (Southern School Complex)*	Patrick Taylor	ICF
Emergency Worker Mon./Decon. Center (Monahan FD)*	Daryl Thome	ICF
Dover Township EOC	Wendy Swygert	ICF
Manchester Township EOC	David Goldbloom-Helzner	ICF
Route Alerting (Hearing Impaired) (Manchester Township)	Tom Blosser	FEMA
Lewisbury Borough/Newberry TWP EOC	Bob Linck	FEMA
Northeast Area EOC (Mount Wolf and Manchester Borough/E. Manchester TWP)	Tom McCance	ICF
Support Jurisdictions		
Adams County		
Adams County EOC	Harold Spedding	ICF (TL – All Support Counties)
Mon./Decon., Reception & Mass Care Center (Gettysburg MS)*	Ed Wojnas	ICF
Franklin County		
Franklin County EOC	Bob Black	ICF
Reception Center (Scotland School)*	Larry Visniesky	ICF
Mon./Decon., & Mass Care Center (Chambersburg MS)*	Neil Gaeta	ICF
Schuylkill County		
Schuylkill County EOC	Sam Nelson	ICF
Reception Center (Blue Mountain HS)*	Bob Fernandez	ICF
Mon./Decon., & Mass Care Center (Pottsville MS)*	Marynette Herndon	ICF

II. Schools Evaluations (Out-of-Sequence) – May 3, 2005

Evaluation Site	Evaluator	Organization
All Schools	Roger Kowieski	ICF (TL)
Cumberland County		
West Shore School District	Rowena Argall	ICF

*Evaluated out-of-sequence on May 4, 2005.

Evaluation Site	Evaluator	Organization
Dauphin County		
Central Dauphin School District	Hollis Berry	ICF
Derry Township School District	Bob Fernandez	ICF
Harrisburg School District	Ed Wojnas	ICF
Lower Dauphin School District	Art Ball	ICF
Middletown Area School District	Neil Gaeta	ICF
Milton Hershey School District	Marynette Herndon	ICF
Steelton-Highspire School	William Ulicny	ICF
Lancaster County		
Donegal School District	David Schweller	ICF
Elizabethtown Area School District	Bart W. Ray	ICF
Lebanon County		
Palmyra Area School District	Dave Stuenkel	ICF
York County		
Central York School District	Patrick Taylor	ICF
	Daryl Thome	ICF
Northeastern School District	Bud Iannazzo	ICF
	Larry Visniesky	ICF
Dover School District	Jim Willison	ICF
Eastern School District	Peter Lejeune	ICF

*Evaluated out-of-sequence on May 4, 2005.

APPENDIX 3. EXERCISE EVALUATION AREA CRITERIA AND EXTENT-OF-PLAY AGREEMENTS

This appendix contains the extent-of-play agreements (EOPs) approved by FEMA Region III for the exercise activities and out-of-sequence demonstrations related to the 10-mile emergency planning zone (EPZ) surrounding the Three Mile Island (TMI) Nuclear Generating Station. The exercise was conducted in the evening on May 3, 2005. Out-of-sequence demonstrations were conducted in the morning on May 3, 2005, in the morning on May 4, 2005, and in the evening on May 4, 2005. The EOPs are arranged according to the exercise evaluation area criteria.

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

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

A. Exercise Evaluation Area Criteria

Listed below are the specific radiological emergency preparedness evaluation area criteria scheduled for demonstration during this exercise.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.a - Mobilization

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

Sub-element 1.b - Facilities

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

Sub-element 1.c - Direction and Control

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

Sub-element 1.d - Communications Equipment

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

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

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

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.a - Emergency Worker Exposure Control

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

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

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

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

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

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

Sub-element 3.b - Implementation of KI Decision

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

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

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

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

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

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

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

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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

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

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)

EVALUATION AREA 5: EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

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

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

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

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

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

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

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

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

Sub-element 6.c - Temporary Care of Evacuees

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

B. Extent-of-Play Agreement

The extent-of-play agreement which follows was developed by the Commonwealth of Pennsylvania and submitted to FEMA Region III for approval. The agreement includes any significant modification or change in the level of demonstration of each exercise evaluation area criterion listed in Subsection A of this appendix. The extent-of-play agreement was approved by FEMA Region III on April 27, 2005.

THREE MILE ISLAND NUCLEAR GENERATING STATION
2005 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

METHOD OF OPERATION

1. Three Mile Island Nuclear Generating Station

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.

2. Bureau of Radiation Protection (BRP)

Personnel will be present at the State EOC, the nuclear facility EOF, and field locations; all areas will be evaluated.

3. PEMA Operations at State EOC

PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel from the Fire Commissioner's Office, the Bureaus 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 EOC.

4. Counties Designated to Participate

The five risk counties (Cumberland, Dauphin, Lancaster, Lebanon, and York), in coordination with PEMA, will demonstrate the capability to implement emergency response operations to include sheltering and/or evacuation. County government will provide direction and coordination to risk municipalities. Adams, Franklin, and Schuylkill Counties will participate in their assigned support roles.

5. PEMA Liaison Officers

Liaison officers will be present at the participating risk county EOCs, the TMI Emergency Operations Facility (EOF), and the Emergency News Center (ENC) to provide assistance,

guidance, and support. These liaison officers will participate as players in the exercise and will be at their assigned location NLT 5:30 p.m. on May 3, 2005.

6. Controllers

The utility will provide controllers at the monitoring/decontamination stations and monitoring/decontamination centers.

7. 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 redemonstration. (Refer to paragraph 12)

8. FEMA Evaluators

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

9. Demonstration Windows

The demonstration windows are those periods of time designated in the exercise during which specified demonstrations will be accomplished out-of-sequence. The purpose of the windows is to provide for more effective demonstrations as well as permitting the release of volunteers from the exercise play at a reasonable hour. There will be **four** out-of-sequence demonstrations during the exercise.

The out-of-sequence MS-1 hospital demonstration will be evaluated at the Good Samaritan Hospital in Lebanon on **March 30, 2005.**

The window for school demonstrations will be conducted out-of-sequence from **9:00 – 11:00 a.m. on May 3, 2005**.

The demonstration for reception centers, mass care centers, monitoring/decontamination centers and stations will be conducted out-of-sequence from **7:00 – 9:30 p.m. on May 4, 2005**.

The out-of-sequence demonstration Pennsylvania State Police traffic control/access control points will be from **9:00 – 11:00 a.m. on May 4, 2005**.

County and municipal EOC operations will be conducted on the **evening** of **May 3, 2005**.

All demonstrations will commence promptly and, barring any complications, not continue past the end of the windows. **(Refer to extent of Play Demonstration Tables)**

10. Stand-down

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

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

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

c. The risk county EOCs will remain operational until the exercise is officially terminated by the State.

11. General Concepts

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

12. Redemonstrations

During the out-of-sequence demonstrations or the plume phase demonstrations any activity that is not satisfactorily demonstrated may be redemonstrated by the participants during the exercise provided it does not negatively interfere with the exercise. Refresher training can be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Redemonstrations will be negotiated between the players, observers, controllers, and evaluators with prior approval from the RAC Chair. It is permissible to extend the evaluation time to accommodate the redemonstration. Activities corrected from a redemonstration will be so noted.

Three Mile Island Nuclear Generating Station
2005 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 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**:*
State agencies, risk and support counties, and risk municipalities will demonstrate call-outs. All out-of-sequence players and equipment will be pre-positioned.

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:
One-third of ORO facilities will be evaluated during this exercise.

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: None

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

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

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

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

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

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

PEMA Negotiated Extent of Play:
In Pennsylvania CDV-700s are calibrated every 4-years.

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

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 insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, J.10.e, f; K.4)

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: None

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

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

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

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

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

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

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

PEMA Negotiated Extent of Play: None

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

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

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

If the ORO has determined that KI will be used as a protective measure for the general public under off-site plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement shelter and evacuation. 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 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 were an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

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

In accordance with plans and/or procedures, OROs and/or officials of pubic 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

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

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

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

EVALUATION AREA 3
Protective Action Implementation

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

PEMA Negotiated Extent of Play:
Radiological briefings 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 KI report form will be demonstrated.

OROs should also demonstrate the use of all dosimetry forms to emergency workers.

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

In Pennsylvania, emergency workers outside of the EPZ do not have turnback values.

Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. In Pennsylvania this will be accomplished through the use of an area kit.

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

Sample kits will be pre-distributed to the municipalities for demonstration purposes. These sample kits will consist of simulated PRDs and simulated KI, and instructions.

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 radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option and is reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

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:
Pennsylvania plans call for issuance of KI to the general public.

Evaluation of KI quantities will be verified using inventory sheets and no KI will be removed from the storage location. Boxes will not be opened. KI questions will be addressed through interviews.

Monitoring/decontamination centers and stations personnel are not issued DRDs/KI since the centers/stations are located outside the EPZ.

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:
Lists of people with special needs are maintained at the municipal EOCs. Copies of these lists will not be provided to the evaluators however; evaluators will be able to inspect these lists during the exercise.

Initial contact with special populations and reception facilities will be simulated (hospitals, nursing homes and correctional facilities). All subsequent calls will be simulated. Actual contact will be made with a transportation provider. 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:

Evacuation of students will be conducted through an interview process.

Role of the bus driver may be conducted through an interview with school or transportation officials if a bus driver is not available. Actual demonstration of the bus route is not required and will not be demonstrated.

Risk County school plans <u>do not</u> require communications between the school and vehicles.

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 IAW plans and procedures

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

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

PEMA Negotiated Extent of Play:
Traffic and access control will be demonstrated by interview – no deployment. A radiological briefing will be provided.

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:
Upon request municipal and county staffs will be prepared to brief the evaluator on actions to be taken should there be an impediment to evacuation on a designated route.

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

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

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

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

EVALUATION AREA 4
Field Measurement and Analysis

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

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

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

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

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

PEMA Negotiated Extent of Play:
Department of Environmental protection (DEP), Bureau of Radiation Protection (BRP) field teams are equipped with the necessary instrumentation and supplies. Evaluators will meet the field teams at the Southcentral Regional Office at 4:00 PM, May 3, 2005, to observe instrumentation checks and equipment inventory verification.

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:
Field Team control is expected to initially be out-of-sequence with the plume timeline. During the exercise the field teams will be directed to take measurements in locations to provide information sufficient to characterize the plume and impacts.

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:

Measurements will be made by Department of Environmental Protection (DEP), Bureau of Radiation Protection (BRP), in accordance with the State Annex E, Appendix 6, and BRP Standard Implementing Procedures (IPs). Two mobile monitoring teams from BRP (Southcentral Regional Office) will demonstrate ambient radiation monitoring and radioiodine and particulate sampling. Field teams will be equipped with appropriate dosimetry and KI. Both teams will be evaluated by FEMA. Each team will be directed to pre-determined monitoring points and perform actual radiation measurements at the first three locations and simulated measurements at the remaining locations. An actual air sample will be taken at the first pre-determined location. Teams will then take additional simulated air samples, as directed, at additional locations, if conditions are appropriate for radioiodine sampling and relay information to the Sate EOC. In place of silver zeolite cartridges, charcoal cartridges will be used for the exercise. All measurements will be forwarded to the State EOC immediately upon obtaining data. Evaluators will meet the field teams at the Southcentral Regional Office at 4:00 P.M., May 3, 2005.

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

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

Sub-element 4.c – Laboratory Operations

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:
All actions to broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by interview.

One municipality per risk county will demonstrate route alerting for hearing impaired residents within their jurisdiction.

Criterion 5.a.2: [RESERVED]

Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes of 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:
There are no exception areas in the TMI EPZ.

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.

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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: None

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 meet. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (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:
Expected demonstration should include a roster of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours.

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.

One mass care center and one monitoring/decontamination center per risk county will be demonstrated during the out-of-sequence window. All monitoring and decontamination teams will demonstrate monitoring, decontamination and registration procedures at one mass care center per county. The risk 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 organization within the facility and space management for monitoring and for decontamination of the evacuating public. Procedures will be demonstrated to show minimizing contamination of the facility and separation of contaminated and non-contaminated (clean) individuals.

At the evacuee monitoring/decontamination centers each team, consisting of a minimum of two persons (monitor and recorder), will monitor a minimum of six (6) volunteer evacuees or

one (1) volunteer evacuee six times , complete the Monitoring/Decontamination Report Form (either by demonstration or explanation), and instruct the evacuees to proceed to the mass care registration points for further processing. The teams will demonstrate: radiological monitoring of at least one vehicle and the simulated decontamination of at least two evacuees, one unable to be decontaminated based on controller inject data. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males A CD V-700, or other survey meter, will be issued to each team. For Portal Monitor Use refer to paragraph below. PRDs will be simulated.

At the emergency worker monitoring/decontamination stations each team, consisting of a minimum of two persons (monitor and recorder), will monitor one emergency worker, and complete the Monitoring/Decontamination Report Form (either by demonstration or explanation). Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. A CD V-700, or other survey meter, will be issued to each team. For Portal Monitor Use refer to next paragraph. PRDs will be simulated.

(Portal Monitor Use) Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated evacuees and emergency workers. In the instances where a portal monitor is used a draft/interim procedure/guidelines may be used, for this evaluation. The monitoring/ decontamination team requirements will be based on the portal monitor capabilities as applicable based on the draft/interim procedure/guidelines, and manufactures recommendations.

Monitoring/decontamination centers and station personnel are not issued DRDs or KI since the centers and stations are outside the EPZ.

Radiation contamination data for the evacuees and vehicle will be provided by the controller and must be included 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 or explained. The materials will 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 within the facility. The evaluator will request that decontamination procedures be explained after the vehicle which has simulated contamination has been monitored. One CD V-700, or other survey meter, will be issued to each monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package, and injected by a controller. Set-up of the facility will be performed as closely as possible to that for an actual emergency with all route markings in place including step-off pads; with the exception of long runs of plastic covered with paper which will not be demonstrated, but the materials will be available and explained.

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

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:
Capabilities will be demonstrated through an interview process. Personnel, at a minimum, will consist of one manager and assistant for each mass care center opened.

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

This sub-element will be evaluated at the Good Samaritan Hospital in Lebanon on March 30, 2005.

Three Mile Island Nuclear Generating Station
Extent of Play Demonstration Tables

RISK COUNTY	DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES AND MUNICIPALITIES	
	MUNICIPALITY	**DATE**
Cumberland	Lower Allen Township	3-May-05
	New Cumberland Borough	3-May-05
Dauphin	Conewago Township	3-May-05
	Derry Township	3-May-05
	Harrisburg City	3-May-05
	Highspire Borough	3-May-05
	Londonderry Township	3-May-05
	* Lower Dauphin Area	3-May-05
	Lower Paxton Township	3-May-05
	Lower Swatara Township	3-May-05
	*Middletown/Royalton Boroughs	3-May-05
	Paxtang Borough	3-May-05
	Steelton Borough	3-May-05
	Swatara Township	3-May-05
Lancaster	Conoy Township	3-May-05
	East Donegal Township	3-May-05
	*Elizabethtown Borough/West Donegal Township/ Mount Joy Township	3-May-05
Lebanon	South Londonderry Township	3-May-05
York	Conewago Township	3-May-05
	Dover Township	3-May-05
	Fairview Township	3-May-05
	Goldsboro Borough	3-May-05
	Hellam Township	3-May-05
	*Lewisberry Borough/Newberry Township	3-May-05
	Manchester Township	3-May-05
	*Northeast Area	3-May-05
	Springettsbury Township	3-May-05
	*Warrington Township/Wellsville Borough	3-May-05
	York Haven Borough	3-May-05

* Joint EOC

1. One reception center in each county.

County	Reception Center Locations	Quantity
Cumberland	Shippensberg University	1
Dauphin	Williams Valley High School	1
Lancaster	Park City Mall	1
Lebanon	Lebanon County Career and Tech Center	1
York	Southern School Complex	1
Adams	Gettysburg Middle School	1
Franklin	Scotland School	1
Schuylkill	Blue Mountain High School	1

2. One mass care center and monitoring/decontamination center in each county will be evaluated.

County	Mass Care Center Locations	Quantity
Cumberland	Shippensberg University	1
Dauphin	Halifax High School	1
Lancaster	Hempfield High School	1
Lebanon	Northern Lebanon High School	1
York	Southern School Complex	1
Adams	Gettysburg Middle School	1
Franklin	Chambersburg Middle School	1
Schuylkill	Pottsville Middle School	1

American Red Cross Chapters and POCs are as follows:

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

Cumberland County Chapter
1710 Ritner Highway
Carlisle, PA 17013
Sherle Davis (717) 243-5211

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

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

Adams County Chapter
(Combined with York County)

Schuylkill County Chapter
1402 Laurel Boulevard
Pottsville, PA
March Mennig (570) 622-9550

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

3. Emergency worker monitoring/decontamination station for the risk county(s).

Cumberland	West Shore Borough FS #13	May 4, 2005
Dauphin	Harrisburg Area Community College	May 4, 2005
Lancaster	Marietta FD	May 4, 2005
Lebanon	Annville Union Hose FD	May 4, 2005
York	Monahan FD	May 4, 2005

4. One hearing impaired notification or one route alerting demonstration by one municipality in each risk county.

Cumberland	Lower Allen Township	May 3, 2005
Dauphin	Paxtang Borough	May 3, 2005
Lancaster	Conoy Township	May 3, 2005
Lebanon	South Londonderry Township	May 3, 2005
York	Manchester Township	May 3, 2005

5. Risk School Districts with schools in the EPZ and those districts outside the EPZ but with students living within the EPZ will participate and will be evaluated by FEMA. These include (all schools within EPZ):

COUNTY	SCHOOL DISTRICT	SCHOOL
Cumberland	*West Shore	Red Mill Elementary
Dauphin	*Central Dauphin	Central Dauphin East HS
	*Derry Township	Hershey HS
	*Harrisburg	Harrisburg HS
	*Lower Dauphin	Lower Dauphin HS
	*Middletown Area	Middletown HS
	*Milton Hershey	Milton Hershey School
	*Steelton-Highspire	Steelton-Highspire Elementary
Lancaster	*Donegal	Maytown Elementary School
	*Elizabethtown Area	East High St. Elementary
Lebanon	Palmyra Area	Palmyra High School

COUNTY	SCHOOL DISTRICT	SCHOOL
York	*Central York	Hayshire Elementary and Roundtown Elementary
	*Northeastern	Northeastern Middle School and Spring Forge Intermediate
	Dover Area	Dover Intermediate
	*Eastern	Kreutz Creek Elem School

6. Traffic and Access Control Points

a. The Pennsylvania State Police from all five risk county troop locations will be briefed at the PSP Troop H Barracks, located in Harrisburg for Cumberland, Dauphin, Lancaster, Lebanon, and York. Members attending the briefing will not actually deploy to the TCP/ACPs.

b. The PSP briefing will be performed out-of-sequence in a demonstration window of **9:00 – 11:00 a.m. on May 4, 2005.**

Three Mile Island Exercise
Listing of Prior Issues

No.	ARCA NUMBER	FACILITY EVALUATED	NEW CRITERIA
1	64-03-1.b.1-A-02	Carlisle Regional Medical Center Set-up procedures were not followed	
2	64-03-6.d.1-A-03	Carlisle Regional Medical Center Did not use step-off pads	
3	64-03-5.b.1-A-04	Dauphin County EOC Incorrect ECL on press release	
4	64-03-1.e.1-A-05	Mannheim Twp HS Complex CDV 700s out of calibration	
5	64-03-3.a.1-A-06	Elizabethtown/West Donegal EOC Staff not briefed on dosimetry and KI	
6	64-03-6.a.1-A-08	New Oxford MS Changed alarm setpoint on portal	
7	64-03-6.a.1-A-09	Scotland School Set-up procedures were not followed	
8	64-03-3.c.2-A-12	Harrisburg SD Parents not informed of plan	
9	64-95-18-A-17	Lancaster Cty. Mon/Decon/MC Center (Centerville Jr. HS) Disposition of monitoring forms	6.a.1
10	64-99-05-A-20	Lancaster Cty. Mon/Decon/MC Center (Mannheim Twp. MS) Did not fill out PRD forms	3.a.1
11	64-99-18-A-21	Lancaster Cty. Mon/Decon/MC Center (Mannheim Twp. MS) Failed to follow checklists	6.a.1
12	64-99-18-A-42	Adams Cty. Rec/Mon/Decon/MC Center (Gettysburg Area MS) Rad monitors did not wear gloves	6.a.1
13	64-99-19-A-43	Adams Cty. Rec/Mon/Decon/MC Center (Gettysburg Area MS) Unknowledgeable MC manager	6.c.1
14	TMIX89-30R	Juniata Cty. EOC Unfamiliar with emergency PAGs	3.e.1
15	64-03-6.c.1- P-01	State EOC Old census data in plan	
16	64-03-2.b.1/4.c.2-P-02	Accident Assessment Center Did not trade data with licensee	
17	64-03-3.a.1-P-03	Carlisle Regional Medical Center Issuing PRDs to ambulance personnel	
18	64-03-6.a.1-P-04	Lancaster County EOC Old census data in plan	

19	64-03-6.a.1-P-05	Faust Jr. HS Status as a mon./decon. center	
20	64-03-6.a.1-P-06	Schuylkill County EOC Conflict of when to open mon./decon.	
21	64-03-3.c.2-P-07	Harrisburg SD No verification phone number in plan	
22	64-03-3.c.2-P-08	Steelton-Highspire SD Plan was missing Annex G	

APPENDIX 4. EXERCISE SCENARIO

EXELON NUCLEAR EMERGENCY PREPAREDNESS NARRATIVE SUMMARY
THREE MILE ISLAND NUCLEAR STATION
MAY 3, 2005

Initial Conditions [1700]

Unit 1 is at 100% power. Direction for on-coming shift: maintain current power level. Unit 1 had been at 100% power for the last 500 days. The following equipment is out of service:

- Sequence of Events Recorder (SER) "A" for card replacement.
- Make-up (MU) Pump B, MU-P-1B, for motor rewind. Motor has been removed and at vendor shop for rewind. Administrative Limiting Condition for Operation (LCO) commenced on 4/26/05 1500 and expires on 5/26/05 1500.
- Reactor Building Purge Isolation Valve, AH-V-1B, due to shorted motor. Valve has been tagged out and scheduled to be worked in work week 0530.
- Reactor Building fan, AH-E-1A, due to fan replacement. The fan is currently being rigged through the Reactor Building Personnel Hatch. A monorail is installed over the inner door and the team is rigging the load to the monorail.

Event 1 – Loss of Main Overhead Annunciators [1720]

During work on Sequence of Events Recorder "A" the technician damages the power supply to SER "B" drawer. This causes a loss of all main overhead annunciators. This will cause the declaration of an UNUSUAL EVENT per MU-6.

Event 2 – Significant Transient with Loss of Main Overhead Annunciators [1805]

A spurious turbine trip occurs – a resulting reactor trip also occurs. The reactor trip is successful with no complications. Approximately 3 minutes (1808) after the turbine trip, a loose parts alarm is received. Post-trip, an Atmospheric Dump Valve (MS-V-4B) sticks open approximately 10%. This will cause the declaration of and ALERT per MA-6.

Event 3 – Small RCS Leak with Bypass of Containment [1820]

A small leak develops on a Reactor Coolant System (RCS) Hot Leg. The leak will be approximately 20-30 gpm. The crew will see release based on mass and flow balance and increase in Reactor Building Atmospheric Monitor (RM-A-2 – P/I/G) readings. Once the leak occurs a reactor building evacuation may be called. On the exit from reactor building the load is still suspended, the crew bypasses the door interlock and opens the outer door. In the

process the outer door hinge is damaged causing a direct path from the reactor building to the auxiliary building. During this event the restoration of Main Overhead Annunciators will be permitted. This event has two concurrent UE classifications (MU-7 for leakage, and FU-1 on bypass of containment), and will require notification for release status change.

Event 4 – Increase in Reactor Coolant Activity [1905]

Approximately 45 minutes after the small RCS break a small loose part causes localized fuel failure. This will raise total coolant activity to approximately 600-700 μCi/ml.

Event 5 – Fuel Cladding Failure [1950]

Loose parts damage fuel cladding mechanically. The TSC will declare Fuel Damage Class 2 and escalate to a SITE AREA EMERGENCY based on FS-1. TSC should implement Site Accountability and Evacuation of Non-Essential Personnel.

Event 6 – Loss Of Makeup/High Pressure Injection [2010]

Make-up Pump, MU-P-A1, will develop an oil leak that will cause the pump to trip on low lube oil pressure. This will cause the loss of seal injection. If the operations crew lines up MU-P-1C to supply normal makeup the pump will not start.

Event 7 – Loss Of Reactor Coolant System [2055]

The RCS leak degrades to approximately 450 600 gpm. Due to the increase in leak rate, containment radiation monitors RM-G-22 and RM-G-23 will increase beyond 22 R/hr. Also depending upon the restoration of MU-P-1C this leak without HPI could result in the loss of subcooling margin. Either of these conditions result in declaring to the RCS fission product barrier lost. This will require the declaration of a GENERAL EMERGENCY and the issuance of a 0-10 mile evacuation Protective Action Recommendation.

Event 8 – Event Termination [At discretion of Lead Controller]

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

APPENDIX 5. PLANNING ISSUES

This appendix contains the Planning Issues assessed and prior Planning Issues re-evaluated during the May 3 and 4, 2005, exercise at Three Mile Island Nuclear Generating Station. Planning Issues are issues identified in an exercise or drill that do not involve participant performance, but rather involve inadequacies in the plan or procedures. Planning Issues are required to be corrected through the revision and update of the appropriate State and local RERPs and/or procedures in accordance with the following schedule:

- Within 120 days of the date of the exercise/drill when the Planning Issue is directly related to protection of the public health and safety.

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

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

New Planning Issues

2.1.2 Shippensberg University

Issue No.: 64-05-6.a.1-P-01

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

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

Possible Cause: The other portal monitors were set aside to expedite survey of persons after decontamination.

Reference: NUREG-0654, J.10.h; J.12; K.5.a; Cumberland County Radiological Monitoring and Decontamination Plan.

Effect: The required number of evacuees could not be processed in the 12-hour time.

Recommendation: Revise the procedures to indicate that three portal monitors be set up at the initial monitoring station and that hand held survey instruments are used in the decontamination area.

Schedule of Corrective Actions: Agreed. In the future hand-held meters will be used for decontamination operations in order to free up portal monitors for mass monitoring.

2.2.1 Dauphin County Emergency Operations Center

Issue No.: 64-05-1.c.1-P-02

Condition: The Dauphin County Emergency Operations Center (EOC) staff in charge of command and control did not coordinate directly with the Pennsylvania Emergency Management Agency (PEMA) prior to the implementation of protective actions such as activation of the alert and notification (A&N) system.

Possible Cause: While the Dauphin County Radiological Emergency Preparedness Plan (RERP) calls for coordination with PEMA, the EOC staff did not follow the Concept of Operations as identified in the plan.

Reference: NUREG-0654, II.A.2.a; Dauphin County RERP, Basic Plan, Section 5.D (Concept of Operations).

Effect: The lack of engagement of a key member of the Dauphin County EOC command and control section prior to the implementation of protective actions may result in inadequate coordination, including delays in activation of the sirens and/or delays in initiating route alerting, both of which may in turn affect the ability of the public to remain informed of protective action decisions in a timely manner.

Recommendation: The Dauphin County EMA should revise its standard operating procedures, including its General Message Flow concept of operations, to ensure that a key member of the command and control section (e.g., a County Commissioner or the Dauphin County EMA Director) is engaged in all communications on the dedicated telephone line that connects PEMA, the utility, and all risk counties so as to allow effective coordination prior to the implementation of protective actions. In addition, the dedicated telephone line unit in the EOC should be relocated from the Communications section to the Command and Control section.

Schedule for Corrective Action: We suspect that this issue is caused by confusion on the part of the evaluator over what the phrase "coordinate directly with PEMA" actually implies. It simply means that during the PEMA call giving instructions for PADs and

siren sounding times the counties have an opportunity to let PEMA know if there are any problems that would preclude them from meeting the siren sounding time or beginning evacuation. A county coordinator keeps the State updated on these things as a matter of course. This procedure gives the coordinators a few minutes grace period to get back to the State EOC with any last minute problems before the A&N sequence begins. The term "coordinate" has never implied that the county coordinators are expected to discuss the appropriateness of the PAD. This has nothing to do with talent or desire. The risk counties simply do not have access to the data, dose projection specialists, and software necessary to confirm the utility PAR. This is the first time this wording, which has been around for years, has ever been raised as an issue. It should not be. Recommend this issue be deleted.

FEMA Response: Do not concur with the State's comments. Although a key member of the command and control section is not necessarily expected to "discuss the appropriateness of the PAD" or other items on the dedicated telephone line that connects PEMA, the utility, and all risk counties, it is important for a key member of the command and control staff to be immediately aware of protective action decisions so that actions required by Dauphin County are taken in the most timely manner and not inadvertently delayed by having to relay PADs from the communications section in the 911 Center to the command and control section in the EOC. Our recommendation to relocate or have an extension of the dedicated phone line with the command and control section still stands. This planning issue remains.

2.2.4 Emergency Worker Monitoring/Decontamination Center – Harrisburg Area Community College

Issue No.: 64-05-1.b.1-P-03

Condition: The present facility layout has not been adequately designed to control contamination of emergency workers (EWs) and their vehicles at the Radiological Monitoring and Decontamination Station, North Hall, Harrisburg Area Community College, Harrisburg, PA. The facility layout does not contain a flow layout for EW vehicle monitoring and decontamination, and the shower room walls do not completely touch the floors in the shower rooms, resulting in potentially contaminated run-off water spreading around the entire shower room floor. Additionally, the entrance and egress corridor from the shower room is not wide enough to permit two persons to pass.

Possible Cause: The facility is inadequate as a decontamination facility.

Reference: NUREG-0654, H.3

Effect: The lack of a facility layout caused delays in processing EW vehicles for monitoring and decontamination of the vehicle and possible cross-contamination in the shower rooms (male and female) of emergency workers.

Recommendations: The ERT, Dauphin County, and Exelon Nuclear should re-examine this facility for its intended purpose.

Schedule for Corrective Action: This same facility and layout has been used consistently since 1999. In the 1999, 2001, and 2003 biennial exercises there was not a single issue noted by the evaluators. Nevertheless, procedures will be developed to resolve the remote possibility of contamination in the showers and a flow chart lay-out will be created for EW vehicles. Recommend that this issue be changed from an ARCA to a planning issue. It at most was "an observed or identified inadequacy in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance," which is exactly how a planning issue is defined.

FEMA Response: Concur. This ARCA is now reclassified as a planning issue.

2.4.1 Lebanon County Emergency Operations Center

Issue No.: 64-05-5.b.1-P-04

Condition: The Reception Center identified in the 2005 Verizon telephone directory (Yellow Pages) emergency information insert is not the Reception Center identified in the county plan or in the Pennsylvania Emergency Management Agency (PEMA) Emergency Alert System (EAS) message.

Possible Cause: There was no review of the phone directory insert prior to publication.

Reference: NUREG-0654, E.5, 7; G.3.a; G.4.c; Lebanon County Plan, Reception Center identified in Appendix 12, p. E-12-5, Appendix 4, p. E-9.

Effect: The public was being instructed to refer to the telephone directory throughout the event. When PEMA issued the EAS message recommending evacuation, they identified the correct center. This variance in facilities may have caused confusion among the public.

Recommendation: Update telephone book.

Schedule for Corrective Action: Again, this was "an observed or identified inadequacy in the ORO's emergency plan or implementing procedures, rather than in the ORO's performance," which is exactly how a planning issue is defined. Additionally, the utility, not the county, writes the telephone directory emergency procedures. This is most definitely not an ORO performance issue. If it is then there is no such thing as a planning issue. The telephone directories will be fixed when the next version is published. This issue should be reclassified as a planning issue.

FEMA Response: Concur. This ARCA has been reclassified as a planning issue.

2.4.2 Reception Center – Lebanon County Career and Technical Center

Issue No.: 64-05-6.a.1-P-05

Condition: Forms were not available for the recording of Vehicle Monitoring and Decontamination data. Vehicle monitoring and decontamination information was not recorded during the demonstration in accordance with Emergency Plan Procedures and the Extent of Play.

Possible Cause: The Lebanon County Emergency Plan Section that includes vehicle monitoring does not have a specific form for recording vehicle monitoring and decontamination activities. The plan does include forms for recording monitoring and decontamination of equipment and personal property which could have been used, but is more appropriate for non-vehicular equipment that does not have multiple locations of potential contamination.

The monitoring and recording procedure had been extensively revised in September 2004, and was being used in this exercise for the first time. The vehicle monitoring team was unfamiliar with the procedure.

Reference: Lebanon County Emergency Plan, Appendix 13, Annex E, Radiological Exposure Control, Attachment 3 – Vehicle and Equipment Monitoring Procedure

Effect: Monitoring and decontamination information was not recorded at the time of the activity and would not provide a record of property that would be needed in post-accident activities.

Recommendation: Add a specific vehicle monitoring and decontamination recording form to the procedure that includes a vehicle diagram so that multiple readings from the same vehicle can be easily recorded and provide training on the new procedure to the monitoring teams.

Schedule of Corrective Actions: Agreed. A vehicle monitoring and decontamination form will be developed and employed.

2.4.3 Monitoring/Decontamination and Mass Care Center – Northern Lebanon High School

Issue No.: 64-05-6.a.1-P-06

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

Mass Care Coordinator stated that monitoring and decontamination would be done at the reception center.

Possible Cause: It appears that Appendix 13 was not revised to incorporate changes in plans for monitoring and decontamination of evacuees at the reception center.

Reference: Lebanon County Emergency Operations Plan, Appendix 13, Attachment 1

Effect: Inconsistencies between the plan and actual operations could create confusion as to where monitoring and decontamination teams are to be deployed.

Recommendation: Appendix 13 of the Lebanon County Emergency Operations Plan should be updated to reflect the current practice of monitoring and decontaminating evacuees at the reception center.

Schedule of Correction Actions: Agreed. The plan will be updated to reflect current practices.

2.4.4 Emergency Worker Monitoring/Decontamination Center – Annville Union Hose Fire Department

Issue No.: 64-05-1.b.1-P-07

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

Possible Cause: The Monitoring/Decontamination Team Leader was not confident to set-up the floor plan of the facility for monitoring/decontamination of the vehicles.

Reference: Lebanon County Emergency Management Plan

Effect: Lack of guidance may cause a delay in activating the facility.

Recommendation: The plans and the procedures should be reviewed to incorporate schematics for all required functions. Consideration should also be given to provide warm water for the temporary shower hook-up.

Schedule of Corrective Actions: Agreed. A schematic for the center will be developed.

2.5.4 Dover Township Emergency Operations Center

Issue No.: 64-05-1.a.1-P-08

Condition: The Standard Operating Procedures (SOPs) refer to the Notification and Resource Manual for lists of equipment, special facilities, and personnel addresses. The

information in the Notification and Resource Manual is not current. In some cases, the information in the Resource Manual does not match information provided in the SOPs.

Possible Cause: The Dover Township Resource Manual has not been updated since its creation in 1982 (per the Emergency Management Coordinator).

Reference: NUREG-0654, A.4; D.3, 4; E.1, 2; H.4

Effect: Since the SOPs are up-to-date and the EOC personnel are very knowledge, this did not have a negative affect during the exercise.

Recommendation: The Notification and Resource Manual should be updated before the next exercise and should then be reviewed at least annually for any necessary corrections.

Schedule of Corrective Actions: Disagree. The Notification and Resource Manual was updated in March 2005, before this exercise occurred. A copy of this is provided as an enclosure to this document. Copies were also provided during the Hot Wash, and we were told the issue was cleared. To quote from the York County Training Officer, "At the Hot Wash, I provided Ken Wierman Evaluation Team Leader for York County a copy of the correct manual, and he said that this cleared this issue. I had provided the EMA Coordinator a new copy of the plan and resource manual when I conducted the EOC training." Recommend this issue be deleted.

FEMA Response: Concur. The actions taken by the York County Training Officer at the Hot Wash were not communicated to the RAC Chair. This planning issue is deleted.

4.4.1 West Shore School District – Red Mill Elementary School

Issue No.: 64-05-3.c.2-P-09

Condition: An inadequate number of buses were available to evacuate the entire population of students from the 10 risk schools. Bus drivers had already left the transportation facility when the initial notice of the emergency was received at 09:27am. A telephone callout of bus drivers resulted in only 35 certified drivers being available. Therefore, although there were 79 buses available, there were only 35 of the 64 certified drivers required to transport the entire population of students from risk schools. Thus, when the order to evacuate the impacted schools in the Emergency Planning Zone (EPZ) was issued at 10:45 a.m., all schools could not be simultaneously evacuated.

Possible Cause: Because the drivers' work schedule has gaps during the school day when the drivers are not required to be at the facility, a driver shortage could occur depending on the time the emergency begins. The Plan does not address multiple bus trips to evacuate students.

Reference: TMI Emergency, Radiological Emergency Response Plan (RERP), West Shore School District, Emergency Operations Plan, York County and Cumberland County

Effect: There would have been a significant delay in evacuating the students.

Recommendation: Update the Plan to address the possible shortage of bus drivers.

Schedule of Corrective Actions: Disagree. In reality, the decision to have an early dismissal does not occur in a vacuum. Everyone, drivers included, are aware of an escalating crisis and are prepared to respond. Most bus drivers have other jobs that they are also committed to. There was no time standard of required availability given during this ad hoc exercise to judge these driver's performances against. The school district is obviously capable of a short notice evacuation or early dismissals due to snow and other events would never successfully occur as they often do. Any shortage of drivers for any reason would be treated as any other unmet need and reported to the county for resolution.

More importantly for future exercises nowhere in the extent of play was there a requirement or an agreement to conduct a call-out of bus drivers. These new requirements cannot simply be added during the evaluation as part of the exercise by any of the parties involved. There is no standard to judge the performance against and it accomplishes nothing but the creation of animosity and mistrust. This issue should be deleted.

FEMA Response: Concur. This planning issue is deleted.

Prior Planning Issues

1.1 State Emergency Operations Center

Issue No.: 64-03-6.c.1-P-01

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

Reason Issue Remains Unresolved: The State needs to replace a 10-mile EPZ map containing population numbers per sector, that is still dated 1990 in the Pennsylvania Emergency Operations Plan.

1.4 Accident Assessment Center (State EOC/BRP)

Issue No.: 64-03-2.b.1/4.c.2-P-02

Description: Dose projection data developed by Pennsylvania Department of Environmental Protection/Bureau of Radiation Protection (BRP) at the Accident Assessment Center (AAC) and state field monitoring team data were not sent to the licensee Emergency Operations Facility (EOF) for use by the licensee. (Data was requested from the licensee by the BRP Liaison and was then sent to the AAC.) Differences greater than a factor of 10 between projected doses by the licensee and the BRP were not discussed (criterion 2.b.1) and the sharing and coordination of plume measurement information among all field teams (licensee and State) was not performed (criterion 4.a.2). (NUREG-0654, H.12; I-8, 10, 11; and Supplement 3; BRP-EP-6.07, Rev. 0, 03/03, Emergency Facility Operations)

Corrective Action Demonstrated: The Radiological Assessment Manager received separate dose projections from both BRP (RASCAL) and the licensee (DAPAR). The RASCAL and DAPAR dose projections were continuously verified to be within a factor of 10 of each other throughout the exercise. The comparison of plume measurement data among all field teams was also observed. The comparison of the two dose assessments and the sharing of plume data adequately resolve Prior Issue # 64-03-2.b.1/4.c.2-P-02.

2.3.1 Lancaster County Emergency Operations Center

Issue No.: 64-03-6.a.1-P-04

Description: The Lancaster County Emergency Operations Plan lists 1990 risk population data for the risk municipalities in Lancaster County. (Lancaster County Emergency Operations Plan, Annex E, Part I (TMI), Lancaster Radiological Emergency Procedures to Nuclear Power Plant Incidents, February 1993, Change 8, May 2002)

Reason Issue Remains Unresolved: The county needs to replace a 10-mile EPZ map containing population numbers per sector, that is still dated 1990 in the Lancaster County Emergency Operations Plan.

3.3.1 Schuylkill County Emergency Operations Center

Issue No.: 64-03-6.a.1-P-06

Description: Annex E, Appendix 3, Reception Center Operations, page E-3-1, contains conflicting guidance on the activation of Reception Centers when a Site Area Emergency (SAE) is declared. In this section it indicates that the Emergency Management Coordinator of Schuylkill County will activate the Reception Center when an SAE is declared. However, Annex E, paragraph 3, Concept of Operations, sub-paragraph E, Monitoring/Decontamination Center(s), sub-element 1, indicates that the Pennsylvania Emergency Management Agency (PEMA) Eastern Region will notify the

Schuylkill County Emergency Management Agency (EMA) when monitoring/decontamination is required. (Schuylkill County Plan; NUREG-0654, J.10.h; J.12; K.5.a)

Corrective Action Demonstrated: The plan was updated in the summer 2004. The updated plan makes clear that the Schuylkill County EMA is responsible for ensuring that the Reception Center is operational and that the PEMA Eastern Region will notify the Schuylkill County EMA when monitoring/decontamination is required.

4.2.3 Harrisburg SD – Harrisburg HS

Issue No.: 64-03-3.c.2-P-07

Description: The Harrisburg School District Emergency Evacuation Plan for TMI (Three Mile Island) requires authentication of emergency notification to be accomplished by return phone call to the Dauphin County Emergency Operations Center. No phone number is listed in the plan or is readily available to verify an emergency situation. (NUREG-0654 J.10.c, d, g)

Commonwealth Recommendation: This planning issue was successfully resolved for the 2005 exercise and should be deleted. The Harrisburg School District Emergency Evacuation Plan (which would be used for Foose Elementary School) dated February 2005 provides the Dauphin County EOC telephone number under Section V, Notification Procedures, on page 5. FEMA was provided a copy of this document. The fact that Foose Elementary School was not evaluated during this exercise does not mean this ARCA cannot be deleted. Foose Elementary School was not responsible for the issue. The school district was and they successfully proved they had remedied the problem during this exercise.

FEMA Response: Concur. This prior planning issue was adequately corrected during the 2005 exercise.

4.2.7 Steelton-Highspire School District – Steelton-Highspire Elementary School

Issue No.: 64-03-3.c.2-P-08

Description: Annex G, "Nuclear Power Plant Incident Preparedness (TMI)," is missing from the "Steelton-Highspire School District, Dauphin County Emergency Operations Plan." (NUREG-0654 J.10.c, d, g)

Corrective Action Demonstrated: Annex G, "Nuclear Power Plant Incident Preparedness (TMI)," was included in the "Steelton-Highspire School District, Dauphin County Emergency Operations Plan." The annex was included in copies at both the School District Administration building, and at the Steelton-Highspire Elementary School.

APPENDIX 6. ADDITIONAL PRIOR ISSUES

This appendix contains the description and status of ARCAs and Planning Issues assessed during prior exercises at the Three Mile Island Nuclear Power Station. These were (1) assessed at jurisdictions or functional entities, which were exempted from demonstration at this exercise, or (2) for ingestion pathway objectives not scheduled for demonstration in this exercise.

Prior Issues at Functional Entities Not Scheduled To Be Demonstrated

Issue No.: 64-95-18-A-17 (6.a.1) – Lancaster County Monitoring/Decontamination Center (Centerville Jr. High School)

Description: Although the monitoring/decontamination forms were filled out properly, there was a misunderstanding about what to do with the forms afterward. There is no procedure to collect the forms and direct them to the proper destination. A procedure should be developed to direct monitoring forms to the proper location. (NUREG-0654, J.12)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: The site should be scheduled for demonstration during the next biennial exercise.

Issue No.: 64-99-18-A-21 (6.a.1) – Lancaster County Monitoring/Decontamination/Mass Care Center (Manheim Township Middle School)

Description: Several significant actions listed in the "Checklist of Manager Radiological Decontamination Monitoring Center" in the Lancaster County monitoring/decontamination procedures (page 2) for a General Emergency were not demonstrated. Personnel in charge were not aware that the following checklist items were required: (a) enter into log names of all persons screened (using Decontamination Center Report Form, Enclosure 9), (b) report to the County EOC name of any person found to be contaminated to 0.5 milliRoentgens per hour (mR/h) or above, and (c) report to the County EOC, every two hours, number of individuals processed through the Center, number contaminated, number decontaminated, number referred to a medical facility, the highest reading on any particular person, and any unusual or noteworthy findings.(NUREG-0654, K.5.a; N.1.a)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: The site should be scheduled for demonstration during the next biennial exercise.

Issue No.: 64-03-1.b.1-A-02 – Newville Community EMS – Carlisle Regional Medical Center

Description: Procedural steps, as listed in the Carlisle Regional Medical Center Safety Manual Policy and Procedures for Radiation Safety that describe the setup of contaminated patient reception, monitoring, and decontamination areas were not followed. Also the setup and use of a new decontamination tent is not identified in the procedure and the storage location for equipment and material has been changed without changing the procedure. Training had not been conducted in setting up and using the new decontamination equipment. Setup and use of this unlighted tent after dark adversely affected monitoring and decontamination activities. The tent is not insulated for use in freezing weather conditions; nor is their response during inclement weather addressed in the procedures. The Dosimetery Record Form used was different than the one attached to the procedure. (NUREG-0654, F.2; H.10; K.5.a, b; L.1, 4)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: Evaluate the use of new equipment and locations. Change procedures to reflect the use of new locations, forms, and equipment. Add descriptive setup drawings to procedures for all new locations and equipment. Provide hands on training in the setup and use of equipment and decontamination areas.

Issue No.: 64-03-6.d.1-A-03 – Newville Community EMS – Carlisle Regional Medical Center

Description: Step-off pads, for emergency workers were not installed at exit points between clean and contaminated areas and a visual aid detailing exit procedures was not available. (NUREG-0654, F.2; H.10; K.5.a, b; L.1, 4)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: Review/Rewrite procedures to include the use of step-off pads. Develop visual aids to allow emergency responders to follow correct exit procedures.

Issue No.: 64-03-1.e.1-A-05 – Monitoring/Decontamination and Mass Care Center – Mannheim Township High School Complex

Description: The CDV 700 survey meters used by the Lancaster County HazMat Team #29 personnel for monitoring of vehicles, did not have calibration stickers indicating the most recent calibration, nor was there any other evidence of calibration of these instruments at the facility. (NUREG-0654, H.7, 10; J.10.a,b,e; J.11; K.3.a)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: Only instruments with current calibrations be used for monitoring and that the calibration date and any correction factors to be applied be displayed on the instruments.

Issue No.: 64-03-3.a.1-A-06 – Elizabethtown Borough/West Donegal Emergency Operations Center

Description: The Radiological Officer (RadOff) did not brief staff about or simulate issuance of dosimetery and potassium iodide (KI) to Emergency Operations Center (EOC) staff in accordance with the Standard Operating Procedures (SOP). The SOP requires that the RadOff brief the EOC staff at the Emergency Classification Level (ECL) Site Area Emergency and issue the dosimetery and KI at that time. Dosimetery and KI are required for the EOC staff since the EOC is located in the Emergency Planning Zone (EPZ) 10-mile radius from the Three Mile Island (TMI) nuclear plant. (NUREG-0654, K.3.a, b)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: It is recommended that the Radiological Officer and the EOC staff follow their plan.

Issue No.: 64-03-6.a.1-A-08 – Monitoring/Decontamination, Reception, and Mass Care Center – New Oxford Middle School

Description: Personnel changed the alarm setpoint for contamination on \the Bicron portal monitor. A person is considered contaminated if there is a reading of 18,000 counts/second (cps) using the Bicron TPM-903 portal monitor. This action limit was derived from the 300 counts/minute (cpm) contamination threshold utilized for monitoring with a CDV-700 (300 cpm x 60 seconds/minute = 18000 cps). The contamination limit may be too high and should not be calculated using this method due to the differences in detector efficiency and sensitivity. (NUREG-J.10.h; J.12; K.5.a)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: Consult with a technical representative to determine what the correct limit should be based on the CDV-300 limit. Revise the procedure to incorporate the correct limit.

Commonwealth Recommendation: This ARCA should be deleted. The same portal monitor and same HAZMAT team that would have been used at New Oxford Middle School are the same ones that were successfully evaluated at Gettysburg Middle School

during the 2005 exercise. Adams County only possesses one portal monitor, so the location it is set up at should not matter as long as the set point is correct and the portal monitor is properly operated.

FEMA Response: Concur. This Prior ARCA was correctly demonstrated during this 2005 exercise and is deleted.

Issue No.: 64-03-3.c.2-A-12 – Harrisburg School District – Foose Elementary School

Description: Parents of children attending schools in the Harrisburg School District have not been informed of the plan or provided information as to where to pick up their children if they are sheltered or evacuated. (NUREG-0654 J.10.c, d, g)

Reason ARCA Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: Send the letter to parents informing them of the actions to be taken in the event of an incident at Three Mile Island Nuclear Generating Station (Appendix 4). Revise the plan to require coordination with the Dauphin County Emergency Operations Center for information to be released to the media regarding protective actions taken for school children during this type of incident.

Commonwealth Recommendation: This ARCA was successfully demonstrated during the 2005 exercise and should be deleted. The letter to parents was mailed in September 2004 at the beginning of the school year from the school district office which was evaluated during the out-of-sequence demonstration. The letter is displayed as Appendix 4, page 4-1 of the Harrisburg School District Emergency Evacuation Plan dated February 2005. A copy of this was provided to FEMA. The fact that Foose Elementary School was not evaluated during this exercise does not mean this ARCA cannot be deleted. Foose Elementary School was not responsible for the issue. The school district was and they successfully proved they had remedied the problem during this exercise.

FEMA Response: Concur. This Prior ARCA is deemed corrected and is deleted.

Prior Issues for Ingestion Exposure Pathway Objectives

Issue No.: TMIX89-3R (3.e.1) – State EOC

Description: Communications with the participating County EOCs during the ingestion pathway phase of the exercise were complicated by the fact that no direct communications link was established between the State EOC and Juniata and Mifflin counties. Instead, the State EOC used the PEMA Area Office as a "go-between" to these counties for communications. This lack of a direct communications link may have

contributed to the fact that a key press release generated by PEMA did not reach Mifflin County. Communications were further complicated during the ingestion phase by use of the fax as the primary means of communication to the participating counties. The fax was enhanced by use of a programmed, automated sequential calldown of the 14 counties and two Area Offices. Despite this enhancement, fax messages were often delayed by 30 minutes at those locations near the bottom of the calldown sequence. Given these unavoidable hard-copy message delays and the lack of a direct State communications link with two of the ingestion pathway counties, it is recommended that key messages between the State EOC and the counties transmitted primarily via fax teletype be accompanied by notice of their pending arrival by telephone calls from the State EOC. (Objective 4 (Criterion 1.d.1); NUREG-0654, F.1 and F.2)

Reason ARCA Unresolved: The communication between the State EOC and ingestion counties during the ingestion pathway phase was not scheduled for demonstration during this exercise.

Recommendation: This aspect of Objective 4 (Criterion 1.d.1) should be demonstrated during the next TMI ingestion exposure pathway exercise.

Prior Planning Issues at Functional Entities Not Scheduled To Be Demonstrated

Newville Community EMS – Carlisle Regional Medical Center

Issue No.: 64-03-3.a.1-P-03

Description: Responding Emergency Medical Technicians (EMTs) from the Newville Community EMS unit #147 had not been issued a Permanent Record Dosimeter (PRD) in accordance with the extent of play. (NUREG-0654, F.2; H.10; K.5.a, b; L.1, 4)

Reason Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: The site should be scheduled for demonstration during the next biennial exercise.

Commonwealth Recommendation: This planning issue should never have occurred. We have been arguing this since the 2003 MS-1 evaluation out-briefing occurred. The state Radiological Emergency Response Plan, or Annex E, has never, nor currently, provides for dosimetry for "transporters of contaminated or potentially contaminated individuals outside of an EPZ." This wording is taken verbatim from Appendix 5 of the referenced plan in the section defining Category C workers. We have no intention of changing this. There never was a requirement for the Newville Community EMS personnel to have Permanent Record Dosimeters or any other type of dosimetry. It should also be noted that this is the only EMS crew in the seventeen MS-1 hospitals in the state were this seems to be an issue with FEMA. We cannot correct an issue that in reality does not exist. This needs to be deleted.

FEMA Response: Concur. This prior planning issue is deleted.

Mass Care – Faust Jr. High School

Issue No.: 64-03-6.a.1-P-05

Description: The emergency plan for Franklin County lists Faust Junior High School as one of three monitoring/decontamination centers. However, all monitoring and decontamination would be performed at the Reception Center at Scotland School. (NUREG-0654-J.12; Franklin County Emergency Response Plan, Appendix 4, Annex E, Attachment F)

Reason Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: Plans regarding the monitoring and decontamination of evacuees in Franklin County should be reviewed and revised.

Harrisburg School District – Foose Elementary School

Issue No.: 64-03-3.c.2-P-07

Description: The Harrisburg School District Emergency Evacuation Plan for TMI (Three Mile Island) requires authentication of emergency notification to be accomplished by return phone call to the Dauphin County Emergency Operations Center. No phone number is listed in the plan or is readily available to verify an emergency situation. (NUREG-0654 J.10.c, d, g)

Reason Unresolved: The site was not scheduled for demonstration during the 2005 exercise.

Recommendation: The site should be scheduled for demonstration during the next biennial exercise.

Commonwealth Recommendation: This planning issue was successfully resolved for the 2005 exercise and should be deleted. The Harrisburg School District Emergency Evacuation Plan (which would be used for Foose Elementary School) dated February 2005 provides the Dauphin County EOC telephone number under Section V, Notification Procedures, on page 5. FEMA was provided a copy of this document. The fact that Foose Elementary School was not evaluated during this exercise does not mean this ARCA cannot be deleted. Foose Elementary School was not responsible for the issue. The school district was and they successfully proved they had remedied the problem during this exercise.

FEMA Response: Concur. This prior planning issue was adequately resolved during the 2005 exercise and is deleted.