



FEMA

Final Exercise Report Susquehanna Steam Electric Station

Licensee: Pennsylvania Power & Light
Exercise Dates: August 17-19; October 26, 2004
Report Date: January 7, 2005

DEPARTMENT OF HOMELAND SECURITY
REGION III - FEDERAL EMERGENCY MANAGEMENT AGENCY
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I. EXECUTIVE SUMMARY

The U.S. Department of Homeland Security, Region III - Federal Emergency Management Agency (FEMA) conducted a post-plume (ingestion) exercise on August 17-19 and a plume, biennial exercise on October 26 and 27 around the Susquehanna Steam Electric Station (SSES). The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. Both the ingestion and plume portion of the exercise were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERPs) and procedures. The most recent prior plume exposure pathway exercise at this site was conducted on September 17 and October 8, 2002.

FEMA wishes to acknowledge the efforts of the many individuals who participated in the exercise in the Commonwealth of Pennsylvania and the counties of Berks, Bradford, Carbon, Columbia, Dauphin, Lackawanna, Lebanon, Lehigh, Luzerne, Lycoming, Monroe, Montour, Northampton, Northumberland, Pike, Schuylkill, Snyder, Sullivan, Susquehanna, Union, Wayne and Wyoming.

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 activities. On August 17 -19, during the post-plume, ingestion exercise FEMA evaluated 22 counties. All other evaluations were conducted during the October 26-27, 2004 biennial plume exercise.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. As a result of this exercise, no Deficiencies were identified, 4 Areas Requiring Corrective Action (ARCAs) were identified, and 3 prior ARCAs remain unresolved.

II. INTRODUCTION

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all off-site nuclear planning and response. FEMA's activities 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's rule contained in 44 CFR Part 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 off-site emergency planning and in the review and evaluation of Radiological Emergency Response Plans (RERPs) and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (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.

FEMA Region III evaluated a full-scale REP exercise for post-plume (ingestion exposure pathway) on August 17-19 and a plume exposure pathway exercise on October 26 and 27 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. The purpose of this exercise report is to present the exercise results and findings regarding the performance of the off-site response organizations (OROs) during a simulated radiological emergency.

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

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 Acting 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 Guidance Memoranda MS-1, “Medical Services,” November 1986;
- FEMA-REP-14, “Radiological Emergency Preparedness Exercise Manual,” September 1991;
- 66 Federal Register (FR) 47525, “FEMA Radiological Emergency Preparedness: Exercise Evaluation Methodology,” September 12, 2001; 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 emergency planning zone (EPZ), a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

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

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the August 17, 18 and 19, ingestion exercise and the October 26 and 27, 2004 plume exercise. The exercise was designed to test the offsite emergency response capabilities in the area surrounding the Susquehanna Steam Electric Station (SSES). 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 SSES is located in northeastern Pennsylvania, Salem Township, and Luzerne County, on the Susquehanna River. The plant is owned and operated by Pennsylvania Power & Light Company. Two boiling water reactors generate an electrical output of 1,050 megawatts each. Unit 1 began commercial operation on June 8, 1983, and Unit 2 on February 12, 1985.

The site encompasses 1,522 acres and is divided into two parts. The principal portion, containing the major operating equipment and buildings, is located 3,000 feet west of the river. The other portion houses the water intake apparatus located near U.S. Route 11. Route 11 passes through the site in a north/south direction, providing both primary and secondary access to the plant. The plant occupies approximately 100 acres of the site. The coordinates are approximately 41° 5'30" north and 76° 8'55" west.

The topography of the plant site is hilly, with elevations ranging from 500 feet above mean sea level (MSL) at the river to about 1,100 feet above MSL at the northwest corner of the site. The plant grade is 670 feet above MSL. The minimum exclusion distance is 1,800 feet; all land within the exclusion area is owned by SSES. The surface soil in the area is considered to be glacial outwash and glacial till soils, which are typical of uplands and terraces. The bedrock consists primarily of red shale of the catskill formation.

The immediate vicinity of the plant is rural, surrounded by farms and undeveloped land. A total of 112 sirens are used for notification of the public; the sirens were installed for coverage of the plume exposure pathway. The nearest population center is Shickshinny Borough (Luzerne County), with a population of 959 located about four miles north of the plant. The nearest population center with more than 20,000 people is the City of Hazleton, with a population of 23,329, located 13 miles to the southeast.

The Berwick Airfield in Salem Township, Luzerne County, serves private aircraft and lies approximately five miles west of the plant. The airfield presents no risk to the plant. The closest major airport is the Wilkes-Barre/Scranton Airport, located 28 miles northeast of the site. The 10-mile EPZ contains an estimated population of 68,511 according to 2000 census data.

B. Exercise Participants

The following agencies, organizations, and units of government participated in the SSES out-of-sequence demonstrations and REP exercise held on August 17-19 and October 26 and 27, 2004.

Commonwealth of Pennsylvania (Observed)

Pennsylvania Emergency Management Agency
Pennsylvania Department of Agriculture
Pennsylvania State Cooperative Extension
Pennsylvania Department of Environmental Protection- Division of Water Quality
Pennsylvania Department of Environmental Protection-Bureau of Radiation Protection
Pennsylvania Army National Guard
Pennsylvania Department of Conservation and Natural Resources – Forestry
Pennsylvania Department of Corrections
Pennsylvania Department of Health
Pennsylvania Department of Transportation
Pennsylvania State Fire Academy
Pennsylvania State Police

Risk Jurisdictions

Columbia County

Columbia County Aging Office
Columbia County Commissioners
Columbia County Emergency Management Agency
Columbia County Emergency Operations Center
Columbia County Farm Service
Columbia County Housing and Redevelopment Authority
Columbia County Planning Commission
Columbia County Public Safety (911 Center)
Columbia County Sheriff
Columbia County Township Emergency Management Agency
Columbia-Montour Area Vocational-Technical School

Berwick Borough

Berwick Area School District Employees
Berwick Borough Fire Department
Berwick Borough Mayor
Berwick Emergency Management
Berwick Police Department
Berwick Public Works
Berwick Emergency Operations Center
Berwick Fire Department
Berwick Public Safety

North Center Township

North Center Township Emergency Management

Luzerne County

Luzerne County Sheriff's Office

Luzerne County Emergency Management Agency

Luzerne County Emergency Operations Center (Dispatch Office)

Luzerne County Emergency Medical Services

Luzerne County Fire Department

Butler Township

Butler Township Board of Supervisors

Butler Township Emergency Management

Butler Township Fire Company

Butler Township Police Department

Conyngham Township

Conyngham Township Deputy Emergency Management Coordinator

Conyngham Township Emergency Management Coordinator

Conyngham Township Board Of Supervisors

Dorrance Township

Dorrance Township Emergency Management Agency

City Of Nanticoke

City Of Nanticoke Fire Department

Hollenback Township

Hollenback Township Emergency Management Agency

Support Jurisdictions

Lackawanna County

Lackawanna County Emergency Management Agency

Lackawanna County Press Office

Lackawanna County Public Safety

Lycoming County

Lycoming County Emergency Management Agency

Lycoming County Fire Department

Lycoming County Public Safety

Lycoming County Radiological Emergency Response Team

Lycoming County Sheriff's Department

Hughesville Fire Department

Hughesville High School Administration & Maintenance

Northumberland County

Northumberland County Department of Public Safety
Northumberland County Department of Engineering
Northumberland County Department of Human Services
Northumberland County Department of the Controller
Northumberland County Department of Transportation
Northumberland Emergency Management Agency

Schuylkill County

Marian High School

Union County

Union County Department of Emergency Services
Union County Sheriff's Department
Union County Emergency Squad
Union County Chapter of the American Red Cross
William Cameron Engine Company
Evangelical Community Hospital
Milton Amateur Radio Club (RACES-ARES)

Wyoming County

Wyoming County Emergency Management Agency
Wyoming County 9-1-1
Wyoming County American Red Cross
Tunkhannock Area School District

Schools

Columbia County School Districts

Benton Area S.D. - L. Ray Appleman ES
Berwick Area S.D. - Orange Street ES
Berwick Area S.D. - Berwick MS
Bloomsburg Area S.D. - Beaver-Main ES
Central Columbia Area S.D. - Central Columbia ES
Columbia Montour Area Vo-Tech School

Luzerne County School Districts

Crestwood S.D. - Crestwood HS
Greater Nanticoke Area S.D. - John S. Fine HS
Hazelton Area S.D. - Valley ES
Northwest Area S.D. - Northwest Jr./Sr. HS
West Side Vo-Tech School
Wilkes-Barre Vo-Tech School

Private/Volunteer Organizations

The following private and volunteer organizations participated in the SSES 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.

Century Security Service
City of Nanticoke Volunteer Fire Department
Community Medical Center
Datom Products Inc (HAZMAT)
Dorrance Township Volunteer Fire Department
Dunmore Fire Department
Fire/Fire Police, Mocanaqua Fire Company
Gallagher Bus Company
Greenfield Township Fire Department
Jefferson Township Emergency Medical Services
Moses Taylor Hospital
Pennsylvania Power and Light
Pennsylvania State University Personnel
Pennsylvania Student Volunteers
Pond Hill Ambulance Service
Radio Amateur Civil Emergency Services (RACES)/Amateur Radio Emergency Service (ARES)
Shamokin Volunteer Fire Department
Shickshinny Ambulance Service
Shikellamy Volunteer Fire Department
Sweet Valley Ambulance Company
Sweet Valley Fire Company, Ross Township
Union Township – Volunteers
William Cameron Fire Station
Wyoming County Emergency Response Volunteers

C. Exercise Timeline

Table 1, on the following page, presents the time at which key events and activities occurred during the SSES plume pathway exercise on October 26, 2004. Also included are times notifications were made to the participating jurisdictions/functional entities.

TABLE 1. EXERCISE TIMELINE

Date and Site: October 26, 2004 Susquehanna Steam Electric Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken											
		PA State EOC	EOF	Media Ops Center	Columbia County EOC	Berwick Borough EOC	North Centre Twp. EOC	South Centre Twp. EOC	Luzerne County EOC	Butler Twp. EOC	Conyngham Borough EOC	Dorrance Twp. EOC	Holenback Twp. EOC
Unusual Event	1605	1610	1639	1625	1613	1628	1625	NR	1608	NR	NR	NR	NR
Alert	1737	1744	1737	1740	1747	1815	1814	1818	1742	1749	1747	1749	1743
Site Area Emergency	1918	1926	1918	1943	1937	1942	1941	1945	1926	1936	1936	1935	1933
General Emergency	2008	2015	2008	2038	2017	2046	2045	2045	2015	2020	2015	2020	2013
Simulated Radiation Release Started	2006	2008	2006	2038	2017	NR	NR	NR	2015	2020	2028	2020	1933
Simulated Radiation Release Terminated												NR	
Facility Declared Operational		1700	1709	1625	1830	1837	1906	1855	1800	1813	1813	1813	1813
Governor's Declaration of State of Emergency		2000	2016	2016	2014	2015	2015	2016	2025	2030	2051	2030	2029
Local Declaration of State of Emergency		---X---	---X---	---X---	1902	---X---	---X---	---X---	---X---	---X---	---X---	---X---	---X---
Exercise Terminated		2149	2130	2120	2150	2120	2156	2130	2150	2130	2133	2120	2130
Precautionary Actions:												NR	NR
restrict airspace		1912	1933	1933	1920	NR	NR	NR	1921	NR	NR	NR	NR
restrict rail traffic		1901	1933	1933	1909	NR	NR	NR	1906			NR	NR
restrict water traffic		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
shelter livestock, place on stored feed		1937	1943	1943	1947	NR	NR	NR	2000	NR	NR	NR	NR
1st A&N Decision (State [made]; local [received])		1941	2037	2015	1946	2019	1955	2005	1942	1951	1951	1950	1951
Tune radio/TV to EAS station		1954	NR	2015	1946	NR	NR	NR	1942	1951	1951	1950	1951
Shelter:		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Evacuate 360° to 10 miles		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1st Siren Activation		1951			1951				1951				
1st EAS		1954											
2nd A&N Decision (State [made]; local [received])		2037	2046	2046	2037	2056	2056	NR	2037	2045	2048	2050	2045
Shelter:		N/A										NR	NR
Evacuate 360° to 10 miles		2037	2046	2046	2044	NR	NR	NR	2037	2045	2048	2050	2047
2nd Siren Activation		2047			2047				2037				
2nd EAS Message		2050											
3rd A&N Decision (State [made]; local [received])		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Shelter:		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Evacuate 360° to 10 miles		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3rd Siren Activation		N/A			N/A				N/A				
3rd EAS Message		N/A											
KI Administration Decision:													
Emergency Workers advised to take KI		2039	2039	2039	2058	2110	2104	2106	2037	2045	2048	2050	2045
Received at location													
Action taken at location													
KI Administration Decision: Emergency Workers advised NOT to take KI		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TABLE 1. EXERCISE TIMELINE

Date and Site: October 26, 2004, Susquehanna Steam Electric Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken									
		Nanticoke City EOC	Slocum Twp. EOC	Union Twp EOC	Lackawanna County EOC	Lycoming County EOC	Northumberland County EOC	Schuylkill County EOC	Union County EOC	Wyoming County EOC	Montour County
Unusual Event		NR	NR	NR	1617	1627	NR	NR	1627	NR	NR
Alert		1748	1754	1755	1750	1808	1839	1838	1754	1845	1820
Site Area Emergency		1931	1932	1930	1938	1933	1933	1934	1934	1929	1933
General Emergency		2017	2019	2019	2026	2044	2043	2042	2041	2040	2037
Simulated Radiation Release Started		1931	1932	2019	1938	1939	2053	NR	2102	2013	NR
Simulated Radiation Release Terminated											
Facility Declared Operational		1809	1814	1813	NR	1743	1900	1856	NR	NR	1846
Governor's Declaration of State of Emergency		2026	2031	2029	2012	2007	2008	2009	2011	2012	2009
Local Declaration of State of Emergency		---X---	---X---	---X---	---X---	---X---	---X---	---X---	---X---	---X---	---X---
Exercise Terminated		2130	2129	2130	2140	2152	2140	2135	NR	2115	2130
Precautionary Actions:											
restrict airspace		NR	NR	NR	1926	1942	1915	1914	1916	1912	1916
restrict rail traffic		NR	1912	NR	1910	1926	1902	1904	1916	1902	1900
restrict water traffic		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
shelter livestock, place on stored feed		NR	NR	NR	1945	2000	1948	NR	1944	NR	NR
1st A&N Decision (State [made]; local [received])		1947		1947	1950						
Tune radio/TV to EAS station		1947	1949	1948	1950	2018	2029	NR	NR	NR	NR
Shelter:		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Evacuate 360° to 10 miles		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1st Siren Activation											
1st EAS											
2nd A&N Decision (State [made]; local [received])		2045	2045	2047	2102	2121	2103	NR	NR	NR	NR
Shelter:											
Evacuate 360° to 10 miles		2045	2045	2047	2102	2121	2103	NR	2121	NR	NR
2nd Siren Activation					2102						
2nd EAS Message					2102						
3rd A&N Decision (State [made]; local [received])		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Shelter:		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
Evacuate 360° to 10 miles		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
3rd Siren Activation											
3rd EAS Message											
KI Administration Decision: Emergency Workers advised to take KI Received at location Action taken at location		2045	2047	2047	2041	2057	2044	NR	2048	NR	2041
KI Administration Decision: Emergency Workers advised <u>NOT</u> to take KI		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities who participated in the August 17-19 Ingestion Exercise and the October 26, 2004 plume exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile plume EPZ and the 50-mile ingestion EPZ surrounding the SSES.

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, presents 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 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
- A¹ – ARCA(s) assessed, but successfully redemonstrated
- R – Resolved ARCA(s) from prior exercises successfully redemonstrated
- U – Unresolved ARCA(s) from prior exercises

TABLE 2. SUMMARY RESULTS OF THE 2004 EXERCISE EVALUATION

Date and Site: August 17-19 and October 26-27, 2004; Susquehanna Steam Electric 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	Pennsylvania EOC (Observed)					A																															
1.2	Commonwealth Emergency News and Information Center																																				
1.3	Emergency Operations Facility						M	M	M																												
1.4	Media Operations Center		M		M																														M		
1.5	State Field Monitoring Team 1				M	U							M	M												M		M									
1.6	State Field Monitoring Team 2				M	U							M	M												M		M									
1.7	State Traffic/Access Control (Bloomsburg Barracks)					M	M						M	M																							

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	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			
2.0 RISK JURISDICTIONS																																				
2.1 Columbia County																																				
2.1.1 Columbia County EOC	M	M	M	M	M	M			M			M	M	M		M	M											M			M					
2.1.2 EW Monitoring/Decontamination (Central Columbia High School)					M							M																				M	M			
2.1.3 Berwick Borough EOC	M	M	M	M	M	M						M	M	M		M	M																			
2.1.4 Berwick Borough Route Alerting				M	M							M	M	M														M								
2.1.5 North Center Township EOC	M	M	M	M	M	M						M	M	M		M	M																			
2.1.6 South Center Township EOC	M	M	M	M	M	M						M	M	M		M	M																			
2.2. Luzerne County																																				
2.2.1 Luzerne County EOC	M	M	M	M	M	M			M			M	M	M		M	M											M			M					
2.2.2 EW Monitoring Decontamination – Station (Sweet Valley Fire Co. Ross Township)					M							M																				M	M			
2.2.3 Butler Township EOC	M	M	M	M	M	M						M	M	M		M	M																			
2.2.4 Conyngham Township EOC	M	M	M	M	M	A ¹						M	M	M		M	M																			

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2.2.5 Dorrance Township EOC	M	M	M	M	M	M					M	M	M		M	M																	
2.2.6 Hollenback Township EOC	M	M	M	M	M	M					M	M	M		M	M																	
2.2.7 Nanticoke City EOC	M			M	M						M	M	M		M	M																	
2.2.8 Nanticoke City Routing Alerting				M	M						M	M	M													M							
2.2.9 Slocum Township EOC	M	M	M	M	M	M					M	M	M		M	M																	
2.2.10 Sugarloaf Township]					R						R																						
2.2.11 Union Township EOC	M	M	M	M	M	M					M	M	M		M	M																	
3.0 SUPPORT JURISDICTIONS																																	
3.1.1 Lackawanna County	M	M	M	M	M																								M				
3.1.2 Reception Center (Big Lots Center)					M						M																			M			
3.1.3 Mass Care Center – Monitoring / Decontamination (Penn. State University)					M						M																			A ¹		M	
3.2.1 Lycoming County	M	M	M	M	M																								M				
3.2.2 Reception Center (Lycoming Mall)					M						M																			M			

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	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 Mass Care – Monitoring / Decontamination Center (Hughesville HS)					M							M																							
3.3.1 Northumberland County					M																								M						
3.3.2 Reception Center (William Cameron Fire Station)					M							M																			M				
3.3.3 Mass Care Monitoring Decontamination Center (Milton Area HS)					M							M																			M		M		
3.4.1 Schuylkill County	M	M	M	M	M																						M			M	M				
3.4.2 Reception Center (Marian HS)					M							M																			M				
3.4.3 Mass Care Monitoring / Decontamination Center (Tamaqua HS)					M							M																			M		M		

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	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				
4.1.3 Bloomsburg Area S.D. (Beaver-Main ES)														M																							
4.1.4 Central Columbia Area S.D. (Central Columbia ES)														M																							
4.1.4 Columbia Montour Area Vo-Tech School														M																							
4.2 Luzerne County School Districts																																					
4.2.1 Crestwood S.D. (Crestwood HS)														M																							
4.2.2 Greater Nanticoke Area S.D. (John S. Fine HS)														M																							
4.2.3 Hazelton Area S.D. (Valley ES)														U																							
4.2.4 Northwest Area S.D. (Northwest Jr./Sr. HS)														M																							
4.2.5 West Side Vo-Tech School														M																							
4.2.6 Wilkes-Barre Vo-Tech School														M																							
5.0 INGESTION COUNTIES**																																					
Group 1																																					
5.1 Bradford		M		M	M																															M	

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5.2 Columbia																		M	M	M											M			
5.3 Lycoming																		M	M	M											M			
5.4 Sullivan (B)		M		M	M													M	M	M											M			
5.5 Wyoming																																		
Group 2																																		
5.6 Snyder		M		M	M													M	M	M											M			
5.7 Dauphin																		M	M	M											M			
5.8 Montour																		M	M	M											M			
5.9 Northumberland																		M	M	M											M			
5.10 Union																		M	M	M											M			
Group 3																																		
5.11 Pike (B)		M		M	M													M	M	M											M			
5.12 Lebanon																		M	M	M											M			
5.13 Susquehanna (B)		M		M	M													M	M	M											M			
5.14 Lackawanna																		M	M	M											M			
5.15 Wayne (B)		M		M	M													M	M	M											M			
5.16 Monroe (B)		M		M	M													M	M	M											M			

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	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			
Group 4																																				
5.17 Carbon (B)		M		M	M													M	M	M														M		
5.18 Lehigh																		M	M	M														M		
5.19 Northampton (B)		M		M	M													M	M	M														M		
5.20 Schuylkill																		M	M	M														M		
5.21 Berks																		M	M	M														M		
5.22 Luzerne																		M	M	M														M		
6.0 STATE SAMPLING TEAM**																																				
6.1 Sampling Team A Soil Sampling				M	M							M	M																						M	
6.2 Sampling Team A Water Sampling				M	M							M	M																						M	
6.3 Sampling Team B Milk and Vegetation Sampling				M	M							M	M																						M	
7.0 STATE RECOVERY TASK FORCE***																																				
7.1 State Recovery Task Force																		M	M	M															M	

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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 FEMA-REP-14 as “...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant.”
- An ARCA is defined in the FEMA-REP-14 as “...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety.”

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

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

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

1.0 THE COMMONWEALTH OF PENNSYLVANIA

1.1 Pennsylvania EOC

(observed only)

- a. **MET:** N/A
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** 1

(This issue was demonstrated at site 2.1.2: Emergency Worker Monitoring/Decontamination at Central Columbia High School. The Issue has been assessed to the Pennsylvania Emergency Management Agency (PEMA))

Issue For Criterion: 63-04-1.e.1-A-01

Description: The Commonwealth of Pennsylvania Bureau of Radiation Protection (BRP) did not assure that the Columbia County Radiological Monitoring and Decontamination Procedure for the Ludlum Model 52 Portal Monitor include a preoperational source check at several points along the vertical line centered between the two side columns of the monitor.

Possible Cause: Preoperational portal monitor source checks are performed by placing a 0.75 microcurie Cs-137 source on the face of each Geiger-Moeller detector. This ensures that each detector responds to a radioactive source and will alarm. This practice does not test the “prior to use” preoperational capability of the monitor to detect surface contamination with a widespread non-uniform distribution. Discussion with a utility representative indicates that a source check for the monitor’s response to a one (1) microcurie Cs-137 source is performed as part of the monitor’s annual recalibration. This is inconsistent with the “prior to use” source check criterion for hand held survey instruments. In accordance with the SOP, Ludlum Model 2241-2 survey meters (with the same detector type) are source checked prior to use. The instruments must respond to the check source, with the response and meet acceptance criteria located on the side of the instrument.

Reference: FEMA REP-21 (March 1995), NUREG-0654 J.12

Effect: The current preoperational source methodology does not test the capability of the monitor to detect surface contamination with a widespread non-uniform distribution.

Recommendation: The Commonwealth of Pennsylvania Bureau of Radiation Protection (BRP) should modify the Standard Operating Procedure to include the requirement to perform a preoperational source check, at several points along the vertical line centered

between the two side columns of the portal monitor (between 0.5 and 5.5 feet above the base).

Schedule of Corrective Actions: The Pennsylvania Department of Environmental Protection – Bureau of Radiation Protection has been in contact with the manufacturer of the Ludlum Model 52 Portal Monitor. The specified device does in-fact meet or exceed the FEMA REP-21 (March 1995) and NUREG-0654 J.12 requirements. At the request of the Bureau of Radiation Protection, the manufacturer is making modifications to the Standard Operating Procedure which indicates that a series of three (3) operational checks is to be conducted using a 1 uCi Cesium-137 check source on “Center-line” at various levels ranging from “ankle height”, waist level and head height. All locations utilizing portal monitors, regardless of the manufacturer, will use a similar procedure and a 1 uCi CS-137 check source.

d. **NOT DEMONSTRATED:** N/A

e. **PRIOR ARCAs – RESOLVED:** 2

Issue No.: BVX92-25R

Description: No consideration given to non-routine agriculture concerns such as bee hives, orchards, fish farms, etc.

Corrective Action Demonstrated: The Pennsylvania Department of Agriculture and the United States Department of Agriculture have computerized databases which list the owner’s name, address and telephone number for bee hives, fish farms, and watercress growers in Pennsylvania. This information was used to develop protective action recommendations for foodstuffs.

Issue No.: TMIX89-6R

Description: One function central to reentry and recovery measures – the establishment of restricted areas (areas suspected or confirmed to be affected by deposition) – was less than effective on the part of the State EOC decision makers and Situation Analysis Group. The boundaries identified for the Elizabethtown restricted area and forwarded to the counties on October 19, 1989, exceeded the 10-mile EPZ and encompassed parts of Lancaster County not evacuated during the emergency plume phase. According to county estimates, approximately 11,000 residents were located in the part of the restricted area extending beyond the 10-mile EPZ. No actions were taken to address the fact that 11,000 residents remained inside the restricted area until a conference call hosted by the State EOC at 1300 on October 20, 1989, during which PEMA first became aware that the boundaries extended beyond the evacuated 10-mile zone. Additionally, the use of legislative routes for the delineation of restricted area boundaries by the PEMA Situation Analysis Group was problematic for the Lancaster and Dauphin County EOC staffs, who found it necessary to translate them into road names more familiar to county and municipal personnel. The establishment of restricted areas should involve extensive

coordination between the Counties and State EOC. (Objective 28; NUREG-0654, I.10. and M.1.)

Corrective Action Demonstrated: The Incident Manager from the Pennsylvania Department of Environmental Protection/Bureau of Radiation Protection (DEP/BRP) coordinated the development of the boundaries of the restricted zone. The boundaries were established using the projected deposition, geo-political boundaries, and confirmatory field monitoring and sampling data. The resulting restricted zone was wholly within the previously evacuated area. The zone boundaries were described using road names in addition to the geo-political descriptions.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

1.2 Commonwealth Emergency News and Information Center (CENIC)

a. **MET:** N/A

b. **DEFICIENCY:** N/A

c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A

d. **NOT DEMONSTRATED:** N/A

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

1.3 Emergency Operations Facility

a. **MET:** N/A

b. **DEFICIENCY:** N/A

c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A

d. **NOT DEMONSTRATED:** N/A

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

1.4 Media Operations Center

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

b. **DEFICIENCY:** N/A

- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

1.5 State Field Monitoring Team 1

- a. **MET:** 1.d.1 3.a.1 4.a.1
3.b.1 4.a.3
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** 1

Issue No.: 63-00-1.e.1-A-01

Condition: Teams 1 and 2 could not find two preselected monitoring locations and had difficulty finding other monitoring locations since the Field Team Coordinator (FTC) and the two field teams were using different maps with different monitoring location posted on the maps.

Reason ARCA Unresolved: FMT 1, and FMT 2, had a book of maps showing the pre-selected sampling locations in the emergency planning zone (EPZ) that had been recently provided. Based on interviews with the FMT members, this set of maps was an improvement on the previously maps; however, several problems with the new maps were identified. Some of the roads where sample locations were located did not have road names on the maps. Another sampling location was shown in a different location that that identified by the tag on the power pole.

Another sampling location was shown as being on the wrong road. Because of these issues with the new maps, a previously ARCA, 63-00-1.e.1-A-01, remains unresolved. The maps being used by the FTC were not observed.

Recommendation: Review and modify maps to assure that roads on which sampling locations are located have names on the maps. Assure that the sampling locations designated on the maps are consistent with the locations designated by the plaques on the

power poles for the individual sampling locations and that the road designations are correct for all sampling locations.

It is suggested that there be a written narrative description of the sampling locations. Power poles are replaced periodically and the plaques showing the sampling location designation may be lost. Written descriptions should include an odometer distance from an easily recognized point. Consideration should be given to the use of global positioning system (GPS) hardware by the teams with the designation of latitude and longitude of each sampling location being provided in a procedure or table.

Schedule of Corrective Actions: The Bureau of Radiation Protection (BRP) will move to a system of locating the field teams sampling using GPS instead of fixed monitoring locations. The fixed monitoring locations will be included in future maps as only reference points. The actual sampling locations will be identified using supplied Global Positioning devices. This system will be in place by the 11/05 LGS Exercise.

1.6 State Field Monitoring Team 2

- a. **MET:** 1.d.1 3.a.1 4.a.1
3.b.1 4.a.3
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** 1

Issue No.: 63-00-1.e.1-A-01

Description: Teams 1 and 2 could not find two preselected monitoring locations and had difficulty finding other monitoring locations since the Field Team Coordinator (FTC) and the two field teams were using different maps with different monitoring location posted on the maps.

Reason ARCA Unresolved: FMT 1, and FMT 2, had a book of maps showing the pre-selected sampling locations in the emergency planning zone (EPZ) that had been recently provided. Based on interviews with the FMT members, this set of maps was an improvement on the previously maps; however, several problems with the new maps were identified. Some of the roads where sample locations were located did not have road names on the maps. Another sampling location was shown in a different location that that identified by the tag on the power pole.

Another sampling location was shown as being on the wrong road. Because of these issues with the new maps, a previously ARCA, 63-00-1.e.1-A-01, remains unresolved. The maps being used by the FTC were not observed.

Recommendation: Review and modify maps to assure that roads on which sampling locations are located have names on the maps. Assure that the sampling locations designated on the maps are consistent with the locations designated by the plaques on the power poles for the individual sampling locations and that the road designations are correct for all sampling locations.

It is suggested that there be a written narrative description of the sampling locations. Power poles are replaced periodically and the plaques showing the sampling location designation may be lost. Written descriptions should include an odometer distance from an easily recognized point. Consideration should be given to the use of global positioning system hardware by the teams with the designation of latitude and longitude of each sampling location being provided in a procedure or table.

Schedule of Corrective Actions: The Bureau of Radiation Protection (BRP) will move to a system of locating the field teams sampling using GPS instead of fixed monitoring locations. The fixed monitoring locations will be included in future maps as only reference points. The actual sampling locations will be identified using supplied Global Positioning devices. This system will be in place by the 11/05 LGS Exercise.

1.7 State Traffic/Access Control

(Bloomsburg Barracks)

- a. **MET:** 1.d.1 3.a.1
1.e.1 3.b.1
3.d.1
3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.0 RISK JURISDICTIONS

2.1.0 Columbia County

2.1.1 Columbia County EOC

- 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.d.1
1.e.1 3.d.2
- b. DEFICIENCY:** N/A
- c. AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. NOT DEMONSTRATED:** N/A
- e. PRIOR ARCAs – RESOLVED:** N/A
- f. PRIOR ARCAs – UNRESOLVED:** N/A

2.1.2 Emergency Worker Monitoring/ Decontamination

(Central Columbia High School)

- a. MET:** 3.a.1 6.a.1
6.b.1
- b. DEFICIENCY:** N/A
- c. AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. NOT DEMONSTRATED:** N/A
- e. PRIOR ARCAs – RESOLVED:** N/A
- f. PRIOR ARCAs – UNRESOLVED:** N/A

2.1.3 Berwick Borough EOC

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

- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** 1

Issue No.: 63-97-30-A-04 (1.a.1)

Description: The following municipality or township emergency operations centers (EOCs) failed to conduct one or more aspects of continuous, 24-hour staffing (complete position-for-position shift change and/or shift change briefing between outgoing and incoming staff members), as required by the extent-of-play agreement:

- a. Berwick Borough
- b. Briar Creek Borough
- c. Mifflin Township
- d. South Centre Township (NUREG-0654, A.4. and N.1.a.)

Corrective Action Demonstrated: A 24-hour roster for all positions in the EOC is maintained by the Berwick Borough Emergency Manager and posted in plain view in the EOC. The Berwick Borough emergency manager instructed staff to simulate calling their shift replacements and advise them of the current situation and to report to the EOC at the predetermined shift change time. By providing the 24-hour staffing, Berwick Borough addressed prior issue number 63-97-30-A-04.

- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.4 Berwick Borough Route Alerting

- a. **MET:** 1.d.1 3.a.1 5.a.1
1.e.1 3.b.1
3.c.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.5 North Center Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.6 South Center Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** 1

Issue No.: 63-97-30-A-04 (1.a.1)

Description: The following municipality or township emergency operations centers (EOCs) failed to conduct one or more aspects of continuous, 24-hour staffing (complete position-for-position shift change and/or shift change briefing between outgoing and incoming staff members), as required by the extent-of-play agreement:

- a. Berwick Borough
- b. Briar Creek Borough
- c. Mifflin Township
- d. South Centre Township (NUREG-0654, A.4. and N.1.a.)

Corrective Action Demonstrated: The South Centre Township Emergency Management Coordinator verified that the roster for key staff in the Emergency

Operations Center is current and demonstrated the capability of 24-hour staffing, if required.

f. PRIOR ARCAs – UNRESOLVED: N/A

2.2.0 Luzerne County

2.2.1 Luzerne County EOC

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.d.1
1.e.1 3.d.2

b. DEFICIENCY: N/A

c. AREAS REQUIRING CORRECTIVE ACTION: N/A

d. NOT DEMONSTRATED: N/A

e. PRIOR ARCAs – RESOLVED: N/A

f. PRIOR ARCAs – UNRESOLVED: N/A

2.2.2 Emergency Worker Monitoring Decontamination Station

(Sweet Valley Fire Co. Ross Township)

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

b. DEFICIENCY: N/A

c. AREAS REQUIRING CORRECTIVE ACTION: N/A

d. NOT DEMONSTRATED: N/A

e. PRIOR ARCAs – RESOLVED: N/A

f. PRIOR ARCAs – UNRESOLVED: N/A

2.2.3 Butler Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.4 Conyngham Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** 1

Issue No.: 63-04-2.a.1-A-01

Description: The Conyngham Township Radiological Officer (Rad Officer) was unfamiliar with his responsibilities.

Possible Cause: The Rad Officer was new to the position and had not been fully trained.

Reference: Annex I to Conyngham Township Radiological Emergency Response Plan.

Effect: The emergency workers assigned to traffic control and route alerting would not have been briefed on the proper use of dosimetry and potassium iodide (KI) and would not have received instructions on dosimetry record keeping.

Recommendation: The Rad Officer and the Emergency Management Coordinator (EMC) should receive additional training on the use of the emergency workers dosimetry and associated equipment, as well as the requirements and precautions for the use of KI.

Corrective Action Demonstrated: The Rad Officer was given the opportunity to re-demonstrate the radiological briefing and corrected the issue.

- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.5 Dorrance Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.6 Hollenback Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.7 Nanticoke City EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.8 Nanticoke City Routing Alerting

- a. **MET:** 1.d.1 3.a.1 5.a.1
1.e.1 3.b.1
3.c.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.9 Slocum Township EOC

- a. **MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A

- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.10 Sugarloaf Township EOC

(This site was not scheduled to be demonstrated but participated to resolve two prior ARCAs)

- a. **MET:** N/A
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** 2

Issue No.: 63-02-1.c.1-A-01

Description: Evacuation order information was not distributed to the Sugarloaf Township Emergency Operations Center (EOC) staff.

Corrective Action Demonstrated: At 2045 on October 26, 2004 the Emergency Management Coordinator at the Sugarloaf Township Emergency Operations Center (EOC) received a message directing evacuation of his township. At 2106 he declared his township evacuated and instructed his EOC staff to relocate to the alternate EOC.

Issue No.: 63-97-05-A-31 (3.a.1)

Description: Dosimetry briefings were not given for the EOC and TCP emergency workers at the Sugarloaf Township EOC. The Township plan (I.32) states: “At SAE the risk municipalities will distribute the (dosimetry) equipment and KI: (a) to all members of their own EOC staff and (b) to emergency organizations (usually fire companies, police departments, and ambulance services) who will then issue to their emergency workers.” (NUREG-0654, K.3.b.)

Corrective Action Demonstrated: On October 26, 2004, the Sugarloaf Township Radiation Safety Officer demonstrated a good knowledge on the proper use of dosimetry and KI. This was further enhanced by the use of a Video Cassette Recording (VCR). An interview of an emergency worker adequately demonstrated that he had been properly trained. The revised Sugarloaf Township Radiological Emergency Response plan (Spring 2004) no longer calls for Dosimetry/KI to be issued to all Emergency Operating Center (EOC) personnel. Instead, a Category B kit is required to be issued to the EOC. This was done and the training VCR was presented to the EOC staff.

- f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.11 Union Township EOC

- a. MET:** 1.a.1 2.a.1 3.a.1
1.b.1 3.b.1
1.c.1 3.c.1
1.d.1 3.d.1
1.e.1 3.d.2
- b. DEFICIENCY:** N/A
- c. AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. NOT DEMONSTRATED:** N/A
- e. PRIOR ARCAs – RESOLVED:** N/A
- f. PRIOR ARCAs – UNRESOLVED:** N/A

3.0 SUPPORT JURISDICTIONS

3.1 Lackawanna County

3.1.1 Lackawanna County EOC

- a. **MET:** 1.a.1 5.b.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.1.2 Reception Center

(Big Lots Center)

- a. **MET:** 1.a.1 3.a.1 6.a.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.1.3 Mass Care Center – Monitoring / Decontamination

(Penn. State University)

- a. **MET:** 1.e.1 3.a.1 6.c.1
6.c.1
- b. **DEFICIENCY:** N/A

c. AREAS REQUIRING CORRECTIVE ACTION: 1

Issue No.: 63-04-6.a.1-03

Description: The portal monitor (TPM-903A) was not source checked prior to use.

Possible Cause: The TPM-903A portal monitor is a new piece of personnel monitoring equipment for use in Lackawanna County. The emergency management individual responsible for setting up the monitor used the set up portion of the manufacture's technical manual as a reference (he did not use the maintenance section in addition to the set up section). The set up portion of the technical manual does not include instructions to perform a source check. Section 5.0, Maintenance, indicates that the Performance Monitoring Checklist (Section 5.5) should be completed each time the monitor is put into service. The Performance Monitoring Checklist includes "walk through test". Section 5.4 describes the walk through test as a source check to be performed holding an appropriate source at the centerline (waist level) between the two vertical detectors.

Reference: NUREG-0654 J.12, TPM903A Operation and Service Manual, FEMA REP-21 (March 1995)

Effect: If the portal monitor is not source checked prior to placing it into service, it cannot be assured that the monitor will detect surface contamination on evacuees.

Recommendation: Complete the Performance Monitoring Checklist in accordance with the manufacturers recommendation.

Corrective Action Demonstrated: This activity was redemonstrated during the exercise. The emergency management individual responsible for setting up the portal monitor reviewed the set up and maintenance requirements of the manufacturer's technical manual including performance of the walk through test. He held a training session with the monitoring/decontamination team. The monitor source check was redemonstrated upon completion of training/procedure review. The monitoring team used a 1 μ Cs-137 check source and successfully performed a source check by having an individual walk though the monitor holding the source (at several locations in the centerline of the monitor). The monitor alarmed each time the source passed through the monitor.

d. NOT DEMONSTRATED: N/A

e. PRIOR ARCAs – RESOLVED: N/A

f. PRIOR ARCAs – UNRESOLVED: N/A

3.2 Lycoming County

3.2.1 Lycoming County EOC

- a. **MET:** 1.a.1 5.b.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.2.2 Reception Center

(Lycoming Mall)

- a. **MET:** 1.e.1 3.a.1 6.a.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.2.3 Mass Care –Monitoring / Decontamination Center

(Hughesville HS)

- a. **MET:** 1.e.1 3.a.1 6.a.1
6.c.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A

- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.3 Northumberland County

3.3.1 Northumberland County

- a. **MET:** 1.a.1 5.b.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.3.2 Reception Center

(Milton Area JHS)

- a. **MET:** 1.a.1 3.a.1 6.a.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.3.3 Mass Care Monitoring Decontamination Center

(Milton Area HS)

- a. **MET:** 1.e.1 3.a.1 6.a.1
6.c.1
- b. **DEFICIENCY:** N/A

- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:**
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.4 Schuylkill County

3.4.1 Schuylkill County

- a. **MET:** 1.a.1 5.b.1 6.a.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.4.2 Reception Center

(Marian HS)

- a. **MET:** 1.a.1 3.a.1 6.a.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.4.3 Mass Care Monitoring / Decontamination Center

(Tamaqua HS)

- a. **MET:** 1.e.1 3.a.1 6.a.1
6.c.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** 2

Issue No.: 63-00-1.e.1-A-10

Description: The Dosimetry/KI Report Form (PEMA-BOP-REP-3) was not properly completed at the Schuylkill County monitoring/decontamination center (Marian High School). Only one person's name and social security number was listed on the two completed forms. The name of each person issued a PRD, a total of 13 names, was listed on one of the two forms under the description column for the 0-20 R DRDs, and the serial numbers of the PRDs issued were listed under the serial number column.

Corrective Action Demonstrated: This ARCA was resolved through completion of the Dosimetry-KI Report Form for each monitoring and decontamination worker at the Mass Care Center located at the Tamaqua High School.

Issue No.: 63-00-6.a.1-A-11

Description: Contamination control was not adequately demonstrated at the Schuylkill County monitoring/ decontamination center at Marian High School. Two individuals with 1.5 mR/h contamination on both hands, placed their hands on an uncovered wall while trying to maintain balance during the monitoring of their shoe soles.

Corrective Action Demonstrated: Contamination control was adequately demonstrated at the Schuylkill County monitoring/decontamination center at Tamaqua High School.

- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.5 Union County

3.5.1 Union County

- a. **MET:** 1.a.1 5.b.1 6.a.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.5.2 Reception Center

(Montandon ES)

- a. **MET:** 1.a.1 3.a.1 6.a.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.5.3 Mass Care –Monitoring / Decontamination Center

(Lewisburg Area HS)

- a. **MET:** 1.a.1 3.a.1 6.a.1
6.c.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A

- f. **PRIOR ARCAs – UNRESOLVED: N/A**

3.6 Wyoming County

3.6.1 Wyoming County

- a. **MET:** 1.a.1 5.b.1 6.a.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

3.6.2 Reception Center

(Tunkahannock MS)

- a. **MET:** 1.e.1 3.a.1 6.a.1
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

3.6.3 Monitoring / Decontamination Center

(Tunkahannock MS)

- a. **MET:** 1.e.1 3.a.1 6.a.1
6.c.1
- b. **DEFICIENCY: N/A**

- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.7 Montour County

3.7.1 Montour County

- a. **MET:** 1.a.1 5.b.1
1.b.1
1.c.1
1.d.1
1.e.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.0 SCHOOL DISTRICTS

4.1 Columbia County School Districts

4.1.1 Benton Area S.D.

(L.Ray Appleman ES)

- a. **MET:** N/A
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** 1

Issue No.: 63-04-3.C.2-A-04

Description: The Benton Area School District Superintendent's Office (SO) was not prepared for this Drill. The superintendent was not present, and his staff was not familiar with the Emergency Response Plan (ERP). The SO had no list of those students who live within the EPZ.

In addition, the facsimiles received from the Columbia County Emergency Operation Center (EOC), regarding Emergency Classification Levels (ECLs), were not forwarded to the principal's office.

Also, the L. Ray Appleman Elementary School (ES) principal was not familiar with the ERP, and was unsure what to do with students who live within the EPZ.

The Emergency Response Plans (ERPs) available at the SO and ES were outdated.

Possible Cause: Unfamiliarity with the Emergency Response Plan, and lack of coordination among the SO, schools and EOC.

Reference: J.10.c,d,g

Effect: If this had been an actual emergency, considerable confusion would have resulted for the students and their parents who live within the EPZ.

Recommendation: When new or updated plans are issued, copies should be made available to the superintendent, all school principals, and their staffs. Personnel in these offices should become familiar with the plan and their responsibilities. Coordination among the SO, schools, and EOC should be improved for drills, exercises and in the event of an actual disaster.

Schedule of Corrective Actions: The updated plan (Change 15 – 2004) had been provided to the Benton Area School District in early 2004. Unfortunately, the primary

point of contact for the School District with regard to emergency plans and procedures was not available for the exercise. Meetings and training will be conducted for the School District to increase the level of understanding and stress the areas of responsibility of the District Office and the affected schools. This ARCA is scheduled to be corrected during the next regularly scheduled SSES Exercise (September 2006).

- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.1.2 Berwick Area S.D.

(Orange Street ES)

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.1.3 Bloomsburg Area S.D.

(Beaver-Main ES)

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.1.4 Central Columbia Area S.D.

(Central Columbia ES)

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

- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

4.1.4 Columbia Montour Area Vo-Tech School

- a. **MET: 3.c.2**
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

4.2 Luzerne County School Districts

4.2.1 Crestwood S.D.

(Crestwood HS)

- a. **MET: 3.c.2**
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

4.2.2 Greater Nanticoke Area S.D.

(John S. Fine HS)

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.2.3 Hazelton Area S.D.

(Valley ES)

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** 1

Issue No.: 63-02-3.c.2-A-06

Description: Initial notification of the drill events was not received at the Hazelton Area School District from the Luzerne County Emergency Operations Center (EOC) in a timely manner. Approximately 30 minutes after the scheduled start of the demonstration, the Transportation Department of the School District contacted the EOC to determine the status of the exercise.

Reason Arca Unresolved: At 0915 the Luzerne County Emergency Operation Center (LCEOC) was transmitting a message via radio to the risk school districts. The Hazelton Area School District did not get the alert message clearly over the radio. The only portion of the message that was heard by the School District was the role-call, confirmation request by LCEOC at the end of the message. The School District Security Coordinator made several attempts to transmit a reply that the message was not received. When communications was not established, the LCEOC used telephone as the back-up system to inform the school district of the Alert status. Prior issue No., 63-02-3.c.2-A-06, reflected the same breakdown in communications. Due to the problem with the radio equipment at this drill the prior issue is not resolved.

Recommendation: Check the radio equipment for operability and either fix it or replace it with another radio.

Schedule of Corrective Actions: The radio equipment will be checked by the Luzerne County Emergency Management Agency and modified or replaced as necessary. The County will also follow up with training and will conduct communications drills to increase the level of confidence. This ARCA is scheduled for correction during the next regular SSES Exercise (September 2006).

4.2.4 Northwest Area S.D.

(Northwest Jr./Sr. HS)

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.2.5 West Side Vo-Tech School

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.2.6 Wilkes-Barre Vo-Tech School

- a. **MET:** 3.c.2
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A

- d. NOT DEMONSTRATED: N/A**
- e. PRIOR ARCAs – RESOLVED: N/A**
- f. PRIOR ARCAs – UNRESOLVED: N/A**

5.0 INGESTION COUNTIES

5.1 Bradford

- a. **MET:** 1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2 Columbia County

- a. **MET:** 3.e.1 5.b.1
3.e.2
3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.3 Lycoming County

- a. **MET:** 3.e.1 5.b.1
3.e.2
3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A

- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.4 Sullivan County

- a. **MET:** 1.b.1 3.e.1 5.b.1
 1.d.1 3.e.2
 1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.5 Wyoming County

- a. **MET:** 3.e.1 5.b.1
 3.e.2
 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.6 Snyder County

- a. **MET:** 1.b.1 3.e.1 5.b.1
 1.d.1 3.e.2
 1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A

- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.7 Dauphin County

- a. **MET:** 3.e.1 5.b.1
3.e.2
3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.8 Montour County

- a. **MET:** 3.e.1 5.b.1
3.e.2
3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.9 Northumberland County

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

- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

5.10 Union County

- a. **MET: 3.e.1 5.b.1
3.e.2
3.f.1**
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

5.11 Pike County

- a. **1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1**
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

5.12 Lebanon County

- a. MET: 3.e.1 5.b.1
3.e.2
3.f.1
- b. DEFICIENCY: N/A
- c. AREAS REQUIRING CORRECTIVE ACTION: N/A
- d. NOT DEMONSTRATED: N/A
- e. PRIOR ARCAs – RESOLVED: N/A
- f. PRIOR ARCAs – UNRESOLVED: N/A

5.13 Susquehanna County

- a. MET: 1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1
- b. DEFICIENCY: N/A
- c. AREAS REQUIRING CORRECTIVE ACTION: N/A
- d. NOT DEMONSTRATED: N/A
- e. PRIOR ARCAs – RESOLVED: N/A
- f. PRIOR ARCAs – UNRESOLVED: N/A

5.14 Lackawanna County

- a. MET: 3.e.1 5.b.1
3.e.2
3.f.1
- b. DEFICIENCY: N/A
- c. AREAS REQUIRING CORRECTIVE ACTION: N/A
- d. NOT DEMONSTRATED: N/A
- e. PRIOR ARCAs – RESOLVED: N/A
- f. PRIOR ARCAs – UNRESOLVED: N/A

5.15 Wayne County

- a. **MET:** 1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.16 Monroe County

- a. **MET:** 1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.17 Carbon County

- a. **MET:** 1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A

- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.18 Lehigh County

- a. **MET:** 3.e.1 5.b.1
3.e.2
3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.19 Northampton County

- a. **MET:** 1.b.1 3.e.1 5.b.1
1.d.1 3.e.2
1.e.1 3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.20 Schuylkill County

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

- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

5.21 Berks County

- a. **MET: 3.e.1 5.b.1**
 - 3.e.2
 - 3.f.1
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

5.22 Luzerne County

- a. **MET: 3.e.1 5.b.1**
 - 3.e.2
 - 3.f.1
- b. **DEFICIENCY: N/A**
- c. **AREAS REQUIRING CORRECTIVE ACTION: N/A**
- d. **NOT DEMONSTRATED: N/A**
- e. **PRIOR ARCAs – RESOLVED: N/A**
- f. **PRIOR ARCAs – UNRESOLVED: N/A**

6.0 STATE SAMPLING TEAM

6.1 Sampling Team A Soil Sampling

- a. **MET:** 1.d.1 3.a.1 4.b.1
1.e.1 3.b.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** N/A
- f. **PRIOR ARCAs – UNRESOLVED:** N/A

6.2 Sampling Team A Water Sampling

- a. **MET:** 1.d.1 3.a.1 4.b.1
1.e.1 3.b.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** 2

Issue No.: LIMX88-06R(4.b.1)

Description: The water sampling teams were not fully briefed on the plume conditions and had no protective clothing, respirators, or radiation detection equipment. Also, they were not trained specifically for obtaining samples in a radiation situation/environment.

Corrective Action Demonstrated: The water and soil sampling team, was fully briefed on the status of the emergency situation prior to their departure to obtain water and soil samples. The briefing included an area map showing the extent of plume deposition, radiological readings, and an outline of the restricted zone. Respirators and protective clothing are not required equipment for the sampling team, with the exception of protective gloves for sample handling, which were provided in the environmental sample kit. Thus, there was no protective clothing or respirators provided or required. Sampling team members were issued Direct Reading Dosimeters (DRD) and had TLD cards. The DRDs were individually assigned and the serial numbers were recorded as well as the readings taken. Radiation meters were used by the sampling team to take ambient readings. Sampling teams were experienced in taking and managing water and soil samples.

Issue No.: LIMX88-07R(4.b.1)

Description: There was no obvious control of the time the samples were to be obtained to assure they represented the radioactivity, which would have been deposited in the river; i.e., to maximize the usefulness of the data obtained.

Corrective Action Demonstrated: The water and soil sampling team recorded the time each sample was taken. The exact time of sampling was recorded throughout the chain of custody accounting.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

6.3 **Sampling Team B Milk and Vegetation Sampling**

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

b. **DEFICIENCY:** N/A

c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A

d. **NOT DEMONSTRATED:** N/A

e. **PRIOR ARCAs – RESOLVED:** 1

Issue No.: LIMX88-08R (4.b.1)

Description: Agricultural sampling teams were not notified in a timely manner by the Pennsylvania Department of Agriculture to report to the dispatch point at the Montgomery County EOC. Since team members did not report until the termination of the exercise, no agriculture sampling procedures could be demonstrated. Also, a prior

inadequacy regarding team members use of dosimetry cannot be cleared since a demonstration of proficiency was not performed. (NUREG-0654, I.8)

Corrective Action Demonstrated: The agricultural sampling team was notified to report to the Columbia County Agricultural Extension Office for the out-of sequence demonstration. The team reported at the required time (9:30 a.m.). All team members were issued an electronic dosimeter (MGP Instruments Model DMC 2000S) and a credit-card type thermoluminescent dosimeter (if not pre-assigned). The electronic dosimeters were checked every hour as required by procedure (BRP-ER-8.02, Rev. 1, 07/04). Team members recorded their dosimeter readings on the “Intermediate and Recovery Phase Personnel Monitoring” form as required by BRP-ER-8.02.

f. PRIOR ARCAs – UNRESOLVED: N/A

7.0 STATE RECOVERY TASK FORCE

7.1 State Recovery Task Force

- a. **MET:** 3.e.1 5.b.1
3.e.2
3.f.1
- b. **DEFICIENCY:** N/A
- c. **AREAS REQUIRING CORRECTIVE ACTION:** N/A
- d. **NOT DEMONSTRATED:** N/A
- e. **PRIOR ARCAs – RESOLVED:** 1

Issue No.: 46-98-29-A-01 (3.f.1)

Description: A representative from the Department of Public Welfare did not participate in the State Response Task Force (SRTF). Consequently, issues concerning short- and long-term psychological impacts of the incident, and individual and family counseling for stress and other evacuation-related emotional or psychological problems, were not adequately addressed. (NUREG-0654, N.1.a.)

Corrective Action Demonstrated: Both primary and support agencies participated in the State Response Task Force, including the Pennsylvania Department of Public Welfare (PW). The mental health services within PW coordinated with the Department of Aging for returning older evacuees to their homes and with the American Red Cross on the matter of welfare inquires from evacuees.

- f. **PRIOR ARCAs – UNRESOLVED:** N/A

APPENDIX 1. ACRONYMS & ABBREVIATIONS

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

A&N	Alert and Notification
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
CFR	Code of Federal Regulations
cpm	Counts per Minute
DRD	Direct-Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMC	Emergency Management Coordinator
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Emergency Operating Plan
EPA	U.S. Environmental Protection Agency
EPZ	Emergency Planning Zone
EW	Emergency Worker
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FR	Federal Register
FRERP	Federal Radiological Emergency Response Plan
ICF	ICF Consulting, Inc.
IPZ	Ingestion Pathway Zone
KI	Potassium Iodide
LOCA	Loss of coolant accident

mR	milliroentgen(s)
mR/h	milliroentgen(s) per hour
MSL	Mean Sea Level
NRC NUREG-0654	U.S. Nuclear Regulatory Commission NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, November 1980
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guidelines
PAR	Protective Action Recommendation
PEMA	Pennsylvania Emergency Management Agency
PIO	Public Information Officer
R	Roentgen(s)
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
R/h	Roentgen(s) per hour
SAE	Site Area Emergency
SSES	Susquehanna Steam Electric Station
TCP	Traffic Control Point
TL	Team Leader
TLD	Thermoluminescent Dosimeter
TSC	Technical Support Center
TWP	Township

APPENDIX 2. EXERCISE EVALUATORS & TEAM LEADERS

The following is a list of the personnel who evaluated the Susquehanna Steam Electric Station exercise on August 16-19 and October 26-27, 2004. Evaluator Team Leaders are indicated by “(TL)” after their organization’s name. Alternate Evaluator Team Leaders are indicated by “(ATL)” after their organization’s name. The organization that each evaluator represents is indicated by the following abbreviations:

FEMA	Federal Emergency Management Agency
NRC	U.S. Nuclear Regulatory Commission
FAA	Federal Aviation Administration
ICF	ICF Consulting, Inc.

EXERCISE OVERVIEW

Darrell Hammons - RAC Chair
 Roman Helo – Site Specialist
 Roger Kowieski – ICF Regional Coordinator

COMMONWEALTH OF PENNSYLVANIA

Pennsylvania EOC (observed only)	Price, J.	FEMA (TL)
CENIC (observed only)	Price, J.	FEMA
Emergency Operations Facility (EOF) (observed only)	Bores, B.	NRC
Media Operations Center	Lott, K.	ICF
State Field Monitoring Team 1	Keller, J.	ICF
State Field Monitoring Team 2	Thome, D.	ICF
State Traffic/Access Control (Bloomsburg Barracks)	Samsel, R.	ICF

RISK JURISDICTIONS

Columbia County

Columbia County EOC	Henryson, A.	FEMA (TL)
	Smith, R.	ICF (ATL)
EW Mon/Decon - Station, Columbia Montour V0-Tech School	Harrison, H.	ICF
Berwick Borough EOC	Cherry, C.	FEMA
Berwick Borough Route Alerting	Lighter, J.	ICF
North Centre Township EOC	Berry, H.	ICF
South Centre Township EOC	Earnshaw, K.	ICF

Luzerne County

Luzerne County EOC	Hough, A.	FEMA (TL)
	Lookabaugh, A.	ICF
EW Mon/Decon – Station, Sweet Valley Fire Co. Ross Township	Rodgers, R.	ICF

Butler Township EOC	Edmonson, B.	ICF
Conyngham Township EOC	Fernandez, R.	ICF
Dorrance Township EOC	Goldberg, G.	ICF
Hollenback Township EOC	Hickey, J.	ICF
Nanticoke City EOC	Jackson, J.	ICF
Nanticoke City Routing Alerting	Kinnear, G.	ICF
Slocum Township EOC	Lake, M.	ICF
Union Township EOC	McClanahan, J.	ICF

SUPPORT JURISDICTION

Lackawanna County

Reception Center - Big Lots Center	Grundstrom, R.	ICF (TL)
Mass Care Center - Monit./Decon., Penn. State Univ.	Cray, D.	ICF
	Campbell, M.	ICF

Lycoming County

Reception Center - Lycoming Mall	Neid, P.	ICF
Mass Care -Monit./Decon Center Hughesville HS	Lott, K.	ICF
	Ball, A.	ICF

Northumberland County

Reception Center - William Cameron Fire Station	Schweller, D.	ICF
Mass Care -Monit./Decon Center William Cameron Fire Station	Van, R.	ICF
	Neidermeyer, B.	ICF

Schuylkill County

Reception Center - Marian HS	Rodgers, R.	ICF (TL)
Mass Care -Monit./Decon Center , Tamaqua HS	Christiansen, H.	ICF
	Wojnas, E.	ICF

Union County

Reception Center - Montandon ES	Thompson, C.	FAA
Mass Care -Monit./Decon Center, Lewisburg Area MS	McCance, T.	ICF
	Willison, J.	ICF

Wyoming County

Reception Center - Tunkahannock MS	Visniesky, L.	ICF
Mass Care -Monit./Decon Center, Tunkahannock MS	Maingi, S.	ICF
Montour County	Maingi, S.	ICF
	Hannah, B.	ICF

Verification Of Prior Issues Only

	Flynn, J.	ICF
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SCHOOL DISTRICTS

Columbia County School Districts

Benton Area S.D. - L. Ray Appleman ES	Kowieski, R.	ICF (TL)
Berwick Area S.D. - Orange Street ES	Ball, A.	ICF
Berwick Area S.D. - Berwick MS	Campbell, M.	ICF
Bloomsburg Area S.D. - Beaver-Main ES	Christiansen, H.	ICF
Central Columbia Area S.D. - Central Columbia ES	Wojnas, E.	ICF
Columbia Montour Area Vo-Tech School	Neidermeyer, B.	ICF
	Harrison, H.	ICF

Luzerne County School Districts
 Crestwood S.D. - Crestwood HS
 Greater Nanticoke Area S.D. - John S. Fine HS
 Hazelton Area S.D. - Valley ES
 Northwest Area S.D. - Northwest Jr./Sr. HS
 West Side Vo-Tech School
 Wilkes-Barre Vo-Tech School

Kowieski, R. ICF (TL)
 Lighter, J. ICF
 Cray, D. ICF
 Lai, T. FEMA
 Van, R. ICF
 McCance, T. ICF
 Willison, J. ICF

Ingestion Counties

Group 1

Bradford County
 Columbia County
 Lycoming County
 Sullivan County
 Wyoming County

Henryson, A. FEMA (TL)
 Iannazzo, Q. ICF
 Iannazzo, Q. ICF
 Malone, L. FEMA
 Malone, L. FEMA
 Lott, K. ICF
 Price, J. FEMA (TL)

Group 2

Snyder County
 Dauphin County
 Montour County
 Northumberland County
 Union County

McCance, T. ICF
 McCance, T. ICF
 Van, R. ICF
 Van, R. ICF
 Lott, K. ICF
 Price, J. FEMA (TL)

Group 3

Pike County
 Lebanon County
 Susquehanna County
 Lackawanna County
 Wayne County
 Monroe County

Bold, F. ICF
 Bold, F. ICF
 Freeman, B. FEMA
 Freeman, B. FEMA
 Johnson, N. ICF
 Porter, Y. FEMA

Group 4

Carbon County
 Lehigh County
 Northampton County
 Schuylkill County
 Berks County
 Luzerne County

Henryson, A. FEMA (TL)
 Hough, A. FEMA
 Hough, A. FEMA
 Fernandez, B. ICF
 Fernandez, B. ICF
 Johnson, N. ICF
 Porter, Y. FEMA

Commonwealth of Pennsylvania

PEMA Headquarters

 State Sampling Teams
 Sampling Team A: Soil Sampling

Geer, M. ICF (TL)
 Rogers, A. ICF
 Bold, F. ICF
 Geer, M. ICF (TL)
 Goldberg, G. ICF

Sampling Team A: Water Sampling
Sampling Team B: Milk and Vegetation Sampling
State Recovery Task Force

Goldberg, G. ICF
Geer, M. ICF
Geer, M. ICF (TL)
Rogers, A ICF
Bold, F. ICF

APPENDIX 3. EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise evaluation area criteria that were scheduled for demonstration on August 17-19, 2004 in the Susquehanna Steam Electric Station (SSES) exercise ingestion exercise, the October 6, 2004 out-of-sequence demonstration, and the October 26, 2004 plume exercise.

The extent-of-play agreement was approved by FEMA Region III on July 15, 2004.

The exercise evaluation area criteria, contained in the “FEMA Radiological Emergency Preparedness Exercise Evaluation Methodology,” 67 FR 20580, April 25, 2002, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, “Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants,” November 1980. Because the exercise evaluation area criteria are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent-of-play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of the evaluation area criteria.

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)

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)

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)

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

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO's planning criteria. (NUREG-0654, J.9, 11)

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

Criterion 2.e.1: Timely relocation, re-entry, and return decisions are made and coordinated as appropriate, based on assessments of radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, I.10; J.9; M.1)

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)

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

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

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

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

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

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)

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

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

Sub-element 4.c - Laboratory Operations

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

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)

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

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 on the following pages was submitted by the Commonwealth of Pennsylvania, and was approved by FEMA Region III on July 15, 2004, in preparation for the SSES exercise on October 17-19, 2004. The extent-of-play 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.

SUSQUEHANNA STEAM ELECTRIC STATION
2004 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

METHOD OF OPERATION
July 15, 2004

1. Susquehanna Steam Electric Station (SSES)

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

2. Bureau of Radiation Protection (BRP)

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

Post Plume Exercise - Technical Day — August 17, 2004

Post Plume Exercise - Sampling Day — August 18, 2004

Plume Exercise - Nuclear facility EOF - October 26, 2004

Plume Exercise – Field Sampling Teams – October 26, 2004

BRP personnel will be evaluated as participants.

3. PEMA Operations at State EOC / PEMA Headquarters

This “Method of Operation” Document includes activities for the Post Plume (Ingestion) Exercise the week of August 16, 2004, the Plume Exercise “Out of Sequence” Activities (October 6, 2004) and the Full-Scale Plume Exercise (October 26, 2004).

A. Post Plume (Ingestion) Exercise – Week of August 16, 2004

- August 17, 2004 – Technical Day and Selected County Baseline evaluation.
- August 18, 2004 – County Day and Environmental Sample Collection
- August 19, 2004 - State Recovery Task Force

B. Plume Exercise – “Out of Sequence” Activities – October 6, 2004

- PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel will disseminate exercise related messages to the participating Counties for dissemination to the participating School Districts during the morning of October 6, 2004. The State Emergency Operations Center (EOC) and Counties will NOT be evaluated during the “Out of Sequence” component. PEMA personnel will serve as “observers” at the identified School Districts.

- PEMA personnel will serve as “Observers” at the various exercise field locations during the evening “Out-of-Sequence” component October 6, 2004. An exercise coordinator will remain at the State EOC. The State Emergency Operations Center (EOC) and Counties will NOT be evaluated during the evening “Out of Sequence” component.

C. Plume Exercise – October 26, 2004

- PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel from the Fire Commissioner’s Office, the Bureau of Administration, Technical Services, Plans, plus Emergency Preparedness Liaison Officers (EPLOs) with accompanying response team members from designated state departments/agencies, including representatives from the USDA State Emergency Board will comprise initial operations at the State Emergency Operations Center (EOC). The State EOC will NOT be evaluated during this exercise.

4. PEMA Area Office Operations

The State Area Offices at Hamburg (Eastern Area) and Harrisburg (Central Area) will be activated and will staff a control cell only. The PEMA Area Offices will not be evaluated during this exercise.

5. Counties Designated to Participate

A. Post Plume Exercise (Ingestion) – Week of August 16, 2004:

Twenty-two (22) counties will participate in the Post Plume Exercise. Thirteen (13) of the twenty-two counties have participated in prior Plume Exercises associated with either the SSES, Three Mile Island or the Limerick Generating Station. Therefore, thirteen counties have participated in a baseline evaluation. The nine (9) counties of Bradford, Carbon, Monroe, Northampton, Pike, Snyder, Sullivan, Susquehanna and Wayne have not been evaluated to date to determine their “baseline” capabilities. Therefore, the above named nine (9) counties shall be evaluated August 17, 2004 to satisfy the baseline evaluation criteria.

All twenty-two (22) counties (Berks, Bradford, Carbon, Columbia, Dauphin, Lackawanna, Lebanon, Lehigh, Luzerne, Lycoming, Monroe, Montour, Northampton, Northumberland, Pike, Schuylkill, Snyder, Sullivan, Susquehanna, Union, Wayne and Wyoming) affected by the fifty mile radius Ingestion Exposure Pathway Emergency Planning Zone will participate in the Post-Plume “Tabletop” Exercise August 18, 2004 at the East Mountain Business Center, Wilkes Barre, PA.

B. Plume Phase Exercise:

The two risk counties (Columbia and Luzerne), 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.

The seven support Counties (Lackawanna, Lycoming, Montour, Northumberland, Schuylkill, Union and Wyoming) will participate in their assigned support roles.

6. PEMA Liaison Officers

Liaison officers will be present at the participating risk / support county EOCs, the SSES Emergency Operations Facility (EOF) and Emergency News Center (ENC) to provide assistance, guidance, and support. These liaison officers will participate as players in the exercise (October 26, 2004).

7. Controllers

Controllers (non-players) will accompany the environmental sampling teams on August 18, 2004. Controllers may provide information to the players at appropriate times based upon the scenario and the actions of the field sampling teams.

PPL / SUSQUEHANNA LLC will provide controllers at the emergency worker monitoring/decontaminating stations and the mass care monitoring/ decontamination centers (October 6, 2004). Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate, regarding radiological readings during the monitoring of personnel. Live radioactive sources will not be used. Exception: A standard 1 micro curie Cesium 137 source will be used by those individuals tasked with the setup of portal monitoring equipment for the purpose of conducting operational tests.

8. PEMA Observers

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

9. FEMA Evaluators

A. Post Plume Exercise (Ingestion)

Federal Evaluators will make visits to the nine counties identified in paragraph 5.A on August 17, 2004 for the purpose of determining “baseline” capabilities. Federal evaluators will also be present at PEMA Headquarters August 17, 2004 for the purpose of evaluating the Bureau of Radiation Protection personnel during the “Technical Day” activities.

Federal Evaluators will be present for the “County Table-top exercise” to be conducted on August 18, 2004 at the East Mountain Business Center, Wilkes Barre, PA. Additionally, Federal

Evaluators will accompany the Environmental Sampling teams August 18, 2004 during the collection of water, milk, vegetation and soil samples.

Federal Evaluators will be present for the State Recovery Task Force activities (August 19, 2004) at PEMA Headquarters, Harrisburg, PA. 2004.

Locations and details are provided in Attachment A, Section I and Attachment B.

B. Plume Exercise

Out of Sequence Period (October 6, 2004): Federal evaluators will be present at the identified “out-of-sequence” demonstration sites per Attachment A, Section II and include Schools, Reception Centers, Emergency Worker Monitoring and Decontamination Stations, Pennsylvania State Police Access Control and Mass Care / Shelters and Mass Care Monitoring and Decontamination Centers.

Plume Phase Exercise (October 26, 2004): Federal evaluators will be present at the identified risk and support county EOC’s to evaluate player response to the actual and simulated events in the exercise scenario. FEMA will evaluate one-third of the risk municipalities in Columbia and Luzerne counties. FEMA will also evaluate the Bureau of Radiation Protection Field Monitoring Teams and the Pennsylvania State Police Access Control Point (ACP) personnel per this document.

Additionally, a “floating-evaluator” will be made available for the purpose of evaluating any ORO locations during this exercise not scheduled to have a federal evaluator, but having a prior issue.

10. 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.

A. Post Plume Exercise (Week of August 16, 2004)

- Post Plume technical data assimilation and evaluation (Bureau of Radiation Protection) will occur Tuesday August 17, 2004 during normal business hours (0830-1600 hrs.) at PEMA Headquarters.
- Non-Baseline counties will be evaluated August 17, 2004 during normal business hours (0830-1600 hrs.).
- The post-plume (ingestion) County tabletop exercise will be conducted August 18, 2004 between 8:30 AM and 3:00 PM.
- Sample collection of Milk, Vegetation, Water, and Soil will be conducted / demonstrated August 18, 2004 at locations specified within Attachment A. Sampling

teams will meet at a predetermined location, meet their evaluators, receive a briefing and deploy to the locations.

- The State Recovery Task Force will be evaluated at PEMA Headquarters between 0830 and 1530 hrs. on August 19, 2004.

B. Plume Phase Exercise

There will be out-of-sequence demonstrations during the exercise. The out-of-sequence MS-1 hospital demonstration was evaluated at Bloomsburg Hospital on April 15, 2003.

The window for school demonstrations will be conducted out-of-sequence from 9:00 - 11:00 a.m. on October 6, 2004.

The demonstration of reception centers, mass care centers, monitoring/ decontamination centers and stations will be conducted out-of-sequence from 7:00 - 9:30 p.m. on October 6, 2004. Locations are specified within Attachment A, Section II.

The out-of-sequence demonstration of Pennsylvania State Police traffic control / access control points will be from 9:00 a.m. - 11:00 a.m. on October 6, 2004.

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

County and municipal EOC operations will be conducted on October 26, 2004. (Please refer to the Extent of Play Demonstration Tables, Attachment A)

11. Stand-down

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

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

12. General Concepts

An emergency plan is drafted to address the generally expected conditions of an emergency. Not everything in the emergency plan may be applicable for a given scenario. The main purpose of an emergency plan is to assemble sufficient expertise and officials so as to properly react to the events as they occur. The responders should not be so tied to a plan that they cannot take actions

that are more protective of the public. Therefore, if, by not following the plan, the responders protect the public equally as well as provided in the plan, it should be noted for possible modification of the plan, but not classified as a negative incident. Furthermore, if, by following the plan there is a failure to protect the public health and safety, it should be noted so that the plan can be modified and the appropriate negative assessment applied.

13. Re-demonstrations

During the out of sequence demonstrations on October 6, 2004, or the plume phase demonstrations on October 26, 2004, any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise, provided it does not negatively interfere with the exercise. Refresher training can be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators. PEMA will advise the RAC Chair prior to initiating any re-demonstrations. It is permissible to extend the evaluation time to accommodate the re-demonstration. Activities corrected from a re-demonstration will be so noted.

SUSQUEHANNA STEAM ELECTRIC STATION 2004 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE EXTENT OF PLAY AGREEMENT

EVALUATION AREA 1 – EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.a – Mobilization

INTENT

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

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

EXTENT OF PLAY

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

the individual's duty location or residence. Further, pre-positioning of staff for out-of-sequence demonstrations is appropriate in accordance with the extent of play agreement.

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

PEMA NEGOTIATED EXTENT OF PLAY

Pre-positioning of state emergency personnel (Liaison Officers) at the Emergency Operations Facility (EOF), Emergency News Center (ENC) and Risk and Support Counties is appropriate due to the commuting distance from the individual's duty location or residence. Risk and support counties and risk municipalities will conduct call-outs to demonstrate the mobilization of key personnel. The nine (9) Counties identified in Section 5.A to be evaluated for their "baseline" capabilities will also conduct a notification call of key personnel as follows during the site visit August 17, 2004.

- Actual calls (or pager notifications) will be made to the county determined key personnel. With exception of the County Coordinator or designee involved in the evaluation interview, other key personnel need not report to the EOC; however, they should provide an indication of their estimated time of arrival. The nine counties may use a roster and "log" the results of the notification call process.

In all instances, the demonstration of a shift change is NOT required, and will be demonstrated by roster. 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

A. Post Plume Exercise:

- The nine (9) counties of Bradford, Carbon, Monroe, Northampton, Pike, Snyder, Sullivan, Susquehanna and Wayne will be evaluated August 17, 2004 by means of a site visit and interview. Availability of backup power may be evidenced by physical inspection, interview and / or maintenance records.

B. Plume Phase Exercise:

- One-third of ORO facilities will be evaluated during this exercise in order to establish a baseline for those facilities.

Sub-element 1.c - Direction and Control

INTENT

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

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

EXTENT OF PLAY

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

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

PEMA NEGOTIATED EXTENT OF PLAY

None

Sub-element 1.d – Communications Equipment

INTENT

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

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

EXTENT OF PLAY

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

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

PEMA NEGOTIATED EXTENT OF PLAY

The nine (9) counties identified in section 5.A of the Method of Operations shall conduct a FEMA observed communications pathway test between the County and the State Emergency Operations Center – Harrisburg, PA. At least two pathways will be demonstrated / tested. One pathway test will be conducted via the State Emergency Voice Alerting Network (SEVAN). The second test may be conducted by a method selected by the County such as standard commercial telephone.

Risk and Support Counties will communicate with the State EOC via SEVAN, PASTAR, Commercial Telephone or e-mail. The State EOC may communicate with the Utility and the Risk Counties via non-commercial dedicated telephone circuits.

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

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

In Pennsylvania CDV-700s are calibrated every 4-years. Support counties do not have DRDs, PRDs, or KI.

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

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

EVALUATION AREA 2 – PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.a - Emergency Worker Exposure Control

INTENT

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

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

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

EXTENT OF PLAY

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

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

PEMA NEGOTIATED EXTENT OF PLAY

Radiological briefings will be provided to address exposure limits and procedures to replace those approaching exposure limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI will be simulated.

The completion of a "Dosimetry-KI Report Form" will be demonstrated.

The decision making process related to KI for the general public will be demonstrated during this exercise.

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

None.

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

EXTENT OF PLAY

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

None

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

The State EOC will not be evaluated during this exercise; however, this element will be demonstrated during the plume phase exercise.

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

INTENT

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

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

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

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

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

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

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

Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and for other critical functions. They should demonstrate the capability to use decision-making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage), or to retrieve important possessions. Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events. Return: Decisions are to be based on environmental data and political boundaries or physical/geological features, which allow identification of the boundaries of areas to which members of the general public may return. Return is permitted to the boundary of the restricted area that is based on the relocation PAG.

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

PEMA NEGOTIATED EXTENT OF PLAY

This sub-element will be evaluated as an adjunct to this exercise during the week of August 16, 2004. Please refer to Attachments A and B regarding specifics.

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

ORO's 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. ORO's 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 "Dosimetry-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 turn back 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 permanent record dosimeters or they may be monitored by dosimeters strategically placed in the work area. In Pennsylvania this will be accomplished through the use of an area kit.

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

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

Category B: 1 PRD and 1 unit of KI

Category C: 1 PRD

All locations that have dosimetry equipment indicated within their Radiological Emergency Response Plan (RERP), will make the dosimetry equipment (and KI) available for inspection by the Federal Evaluator. In order to demonstrate an understanding of the use of the dosimetry equipment, KI and associated forms, the location need only remove and distribute/ issue a maximum of six (6) units of dosimetry from their inventory.

Sub-element 3.b – Implementation of KI Decision

INTENT

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to provide radio protective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed.

While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option and is reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radio protective drugs.

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals is maintained. (NUREG-0654, J.10. e)

EXTENT OF PLAY

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

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

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

Personnel assigned to operate Monitoring / Decontamination centers and stations are not issued DRDs or KI since the centers/stations are located outside the EPZ.

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 by the appropriate County with special populations and reception facilities will be actual (hospitals, nursing homes and correctional facilities). All subsequent calls will be simulated. Actual contacts (up to two) will be made with transportation providers as per plan. All actual and simulated contacts should be logged.

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

EXTENT OF PLAY

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

School Students will not be involved during the exercise. Actions and activities associated with the demonstration of Criterion 3.c.2 will be limited to the School District Administration key personnel and the County. Evacuation of students will be conducted through an interview process.

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

Risk County school plans do not require communications between the school and vehicles. Bus drivers are not considered emergency workers.

Private schools, private kindergartens, and day care centers do not participate in REP exercises.

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

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

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

EXTENT OF PLAY

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

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

PEMA NEGOTIATED EXTENT OF PLAY

Both sub-elements will be demonstrated during the Post-Plume Exercise (Week of August 16, 2004). Data Development and Assessment will be demonstrated by Commonwealth Agencies only. Federal participation will be simulated.

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

This sub-element will be evaluated during the post-plume (ingestion) exercise scheduled for the week of August 16, 2004. Ingestion Counties will demonstrate their activities during the Wednesday August 18, 2004 "Table-Top" exercise. The Commonwealth of Pennsylvania State Recovery Task Force (SRTF) will demonstrate their activities on Thursday August 19, 2004.

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

Pennsylvania 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 Southeast Regional Office at 2:30 PM, October 26, 2004 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.

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

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

PEMA NEGOTIATED EXTENT OF PLAY

Measurements will be made by Department of Environmental Protection (DEP), Bureau of Radiation Protection (BRP), in accordance with the State Annex E, Appendix 6, and BRP Standard Implementing Procedures (SIPs). Two mobile monitoring teams from BRP (Southeast 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 State 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 Southeast Regional Office at 2:30 P.M., October 26, 2004.

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

INTENT

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

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

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

EXTENT OF PLAY

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

This element will be demonstrated during the Post Plume Exercise scheduled for the week of August 16, 2004. Field teams will demonstrate the collection of environmental and agricultural samples August 18, 2004 at predetermined locations. Specific locations and details regarding the sampling location, date and time(s) appear in Attachment A to this document.

Sub-element 4.c - Laboratory Operations

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

This sub-element will not be evaluated during this SSES exercise. This element was demonstrated during the 2001 TMI Exercise, May 22, 2001.

EVALUATION AREA 5 – EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

The Commonwealth of Pennsylvania has implemented a Statewide EAS Control system in cooperation with the Pennsylvania Association of Broadcasters per the State Emergency Communications Committee and Plan. The State EOC (PEMA) is the initiating point for activation of EAS. For the purposes of the Post Plume Exercise, the use of the EAS System will be simulated. The State will make decisions and discuss / indicate the use of EAS as appropriate. For the purposes of the Plume Phase Exercise (October 26, 2004) the State EOC will serve as the activation point for EAS. Counties have the control equipment for activation of sirens. Coordination will occur between the State EOC and the affected counties with respect to the ANS process. Sirens will be coordinated and the sounding simulated at the appropriate time with the simulated activation of EAS taking place approximately 3 minutes following the simulated activation of the sirens. Broadcasting will not be interrupted. All subsequent actions to broadcast stations will be simulated. Broadcast of the message(s) or test message(s) is NOT required and NOT requested.

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 for primary alerting/notification. This action will NOT be subject to specific time requirements.

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

One municipality per risk county will demonstrate route alerting for hearing impaired residents within their jurisdiction. (Please refer to Attachment A, Section II.4)

Criterion 5.a.2: [RESERVED]

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

EXTENT OF PLAY

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

There are no exception areas in the SSES 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.

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner. This will NOT be subject to specific time requirements. Any subsequent information / news statements required by the ORO Plans will be made by the individual counties to ONE specific electronic news media / information outlet serving the county. Specific details are contained within Attachment A to this document.

Risk and Support Counties will receive and handle “Rumor” messages via their individual “Rumor Control” processes. Counties will receive approximately ten (10) calls from the State cell. Counties will be expected to receive the calls, identify trends and take appropriate actions.

EVALUATION AREA 6 – Support Operation/Facilities

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

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

PEMA NEGOTIATED EXTENT OF PLAY

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.

A minimum of six individuals per monitoring station should be monitored (or one person six times).

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 the "Portal Monitor Use" 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, 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, emergency workers and/or vehicles. 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 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. 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

The support counties will demonstrate the operation of one mass care center in each support county during the out-of-sequence window. Floor plans with flow diagrams of the mass care centers will be available to show organization within the facility and space management during a real emergency. Mass care center locations are listed in the demonstration tables "Demonstration of Mass Care Centers (Attachment A, Section II.2)".

Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The responsible American Red Cross chapter will show the source and quantities by job functional description to be provided to mass care centers to support the 24-hour operation. The responsible Red Cross Chapter(s) will be visited or telephonically contacted during business hours on October 6, 2004, by a FEMA evaluator to provide information regarding the 24-hour operation. Schematics of these mass care centers will be available to show organization within the facility and space allocation for the registration and sheltering the evacuating public. Necessary signs, directional arrows and forms will be available and used to demonstrate registration, at a minimum, of three evacuees needing housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators. This out-of-sequence demonstration window will be from 7:00 PM – 9:30 PM on October 6, 2004.

American Red Cross risk and support county chapters:

Greater Berwick Chapter
344 Market Street
Berwick, PA 18603
(570)-752-7221
Fax: (570)-759-6895
E-mail: nihoffk@epix.net

Bloomsburg Chapter
119 E. 7th Street
Bloomsburg, PA 17815
(570)-784-1395
FAX: (570)-784-1577
E-mail: blmrdrs@sunlink.net

Wyoming County Chapter
49 E. Tioga Street
Tunkhannock, PA 18657
(570)-836-2626

FAX: (570)-836-3691
E-mail: redcross@epix.net

Lycoming County Chapter
Mrs. Joy Hanner
320 East 3rd Street
Williamsport, PA 17701
(570)-326-9131
FAX: (570)-326-2514
E-mail: jhanner@lycoming-redcross.org

Scranton Chapter
545 Jefferson Avenue
Scranton, PA 18510
(570)-344-7281
FAX: (570)-344-6534
E-mail: bhaber@neparc.org

ARC in Schuylkill and Eastern Northumberland County
1402 Laurel Boulevard
Pottsville, PA 17901
(570)-622-9550
FAX: (570)-622-9654
E-mail: redcross@infi.net

Upper Northumberland County Chapter
560 Mahoning Street
Milton, PA 17847
(570)-742-4171
E-mail: darc@evenlink.net

Union County Chapter
249 Farley Circle
P.O. Box 82
Lewisburg, PA 17837
(570)-524-0400
FAX: (570)-524-0462
E-mail: unionarcdis@yahoo.com

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

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO's) should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

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

EXTENT OF PLAY

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

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

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

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

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

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

Frequency for Evaluation of New Criteria.

Note: This sub-element was evaluated at Bloomsburg Hospital on April 15, 2003.

ATTACHMENT A

**Susquehanna Steam Electric Station 2004
Extent of Play Demonstration Tables**

I. Post Plume (Ingestion) Exercise – Week of August 16, 2004

Counties to be evaluated for “baseline” capabilities (August 17, 2004)

Bradford	Carbon
Monroe	Northampton
Pike	Snyder
Sullivan	Susquehanna
Wayne	

Post-Plume (Ingestion) Counties (Tabletop August 18, 2004)

Berks	Bradford
Carbon	Columbia
Dauphin	Lackawanna
Lebanon	Lehigh
Luzerne	Lycoming
Monroe	Montour
Northampton	Northumberland
Pike	Snyder
Sullivan	Schuylkill
Union	Susquehanna
Wyoming	Wayne

Water Sampling Location: Danville Water Company – August 18, 2004

Milk and Vegetation Sampling Location: Forest Pike Farm, Manzoni Brothers
RR# 2, Box 252
Dallas, PA – August 18, 2004

Soil Sampling Location: Deposition area near Susquehanna River – August 18, 2004

State Recovery Task Force: PEMA Headquarters – August 19, 2004

II. PLUME PHASE EXERCISE – OUT OF SEQUENCE ACTIVITIES AND SCENARIO ACTIVITIES

DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES (Plume Phase Exercise)		
COUNTY	DATE	Time
Columbia	10/26/2004	Per Scenario
Luzerne		
Lackawanna		
Lycoming		
Montour		
Northumberland		
Schuylkill		
Union		
Wyoming		

Municipalities indicated in **bold** are scheduled for evaluation.

DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES (Plume Phase Exercise)		
RISK COUNTY	MUNICIPALITY	DATE
Columbia	Beaver Township	10/26/2004
	Berwick Borough	
	Briar Creek Borough	
	Briar Creek Township	
	Fishing Creek Township	
	Mifflin Township	
	North Center Township	
	South Center Township	
Luzerne	Black Creek Township	10/26/2004

DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES (Plume Phase Exercise)		
RISK COUNTY	MUNICIPALITY	DATE
	Butler Township	
	Conyngam Borough	
	Conyngam Township	
	Dorrance Township	
	Hollenback Township	
	Hunlock Township	
	Huntington Township *	
	Nanticoke City	
	Nescopeck Borough	
	Nescopeck Township	
	New Columbus Borough *	
	Newport Township	
	Nuangola Borough	
	Salem Township	
	Shickshinny Borough	
	Slocum Township	
Sugarloaf Township		
Union Township		

*Joint EOC

1. One reception center in each county. (Out of Sequence)

DEMONSTRATION of Reception Centers		
COUNTY	DATE	Time
Lackawanna	10-6-04	7:00 p.m. – 9:30 p.m.
Lycoming		
Northumberland		
Schuylkill		
Union		
Wyoming		

COUNTY	Reception Centers Location
Lackawanna	Big Lots
Lycoming	Lycoming Mall
Northumberland	Milton HS
Schuylkill	Marion HS
Union	Montandon Elementary School – Montandon
Wyoming	Tunkhannock MS, Tunkhannock

2. One mass care center and monitoring/decontamination center in each support county will be evaluated. (Out of Sequence)

COUNTY	DEMONSTRATION of Mass Care Centers	
	DATE	Time
Lackawanna	10-6-04	7:00 p.m. – 9:30 p.m.
Lycoming		
Northumberland		
Schuylkill		
Union		
Wyoming		

COUNTY	Mass Care Center Locations	Quantity
Lackawanna	Penn State University (Pending Approval)	1
Lycoming	Hughesville HS	1
Northumberland	Milton JHS	1
Schuylkill	Tamaqua HS	1
Union	Lewisburg MS	1
Wyoming	Tunkhannock MS	1

3. Emergency worker monitoring/decontamination station for the risk county. (Out of Sequence)

Columbia	Columbia Montour Vo-Tech	10-6-04
Luzerne	Sweet Valley Fire Company, Ross Township	10-6-04

4. One hearing impaired notification and one route alerting demonstration by one municipality in each risk county. (During Scenario Exercise)

Columbia	Berwick Borough	10-26-04
Luzerne	Nanticoke City	10-26-04

The two above locations are scheduled for evaluation.

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):

Out of Sequence

COUNTY	SCHOOL DISTRICT	SCHOOL(s)
Columbia	Berwick	Orange Street ES / Berwick MS
Columbia	Benton	L. Ray Appleman ES
Columbia	Bloomsburg	Beaver Main ES
Columbia	Central Columbia	Elementary School
Columbia	Columbia Montour AVTS	Columbia Montour AVTS
Luzerne	Crestwood	Crestwood HS
Luzerne	Greater Nanticoke	John S. Fine HS

COUNTY	SCHOOL DISTRICT	SCHOOL(s)
Luzerne	Hazleton	Valley Elementary
Luzerne	Northwest Area	Northwest HS
Luzerne	West Side AVTS	West Side AVTS
Luzerne	Wilkes Barre AVTS	Wilkes Barre AVTS

6. Traffic and Access Control Points

- a. The Pennsylvania State Police will brief at the PSP Bloomsburg Barracks, 6850 Hilday Church Road, Bloomsburg, PA 17815 Those attending the briefing will not actually deploy to the TCP/ACPs.
- b. The PSP briefing will be performed out of sequence in a demonstration window of 9:00 a.m. to 11:00 a.m. on October 6, 2004.
- c. Each municipal / regional police force with a TCP assigned in its plan will demonstrate all preparation duties including TCP responsibilities and radiological briefing. Dispatch of persons to the TCP site will not occur during the exercise.
- d. Municipal and county staffs will be prepared to brief the FEMA evaluator on actions to be taken should there be an impediment to evacuation on a designated route. This will be demonstrated between 7:00 pm - 9:30 pm on October 26, 2004.

Municipal / Regional Police Forces	
Columbia County	Luzerne County
Beaver Township	Black Creek Township
Berwick Borough	Butler Township
Briar Creek Borough	Conyngham Borough
Briar Creek Township	Conyngham Township
Fishing Creek Township	Dorrance Township
Mifflin Township	Hollenback Township
North Centre Township	Hunlock Township
South Centre Township ¹	Huntington Township ²
	Nanticoke City
	Nescopeck Borough
	Nescopeck Township
	New Columbus Borough ²
	Newport Township
	Nuangola Borough
	Salem Township

¹ South Centre/Mifflin PD

² Joint EOC

Municipal / Regional Police Forces	
	Shickshinny Borough
	Slocum Township
	Sugarloaf Township
	Union Township

ATTACHMENT B

POST PLUME EXERCISE

COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Below is the proposed Extent of Play for the SSES Post Plume Exercise, Technical Day – August 17, 2004. Evaluation Areas 2.d, 2.e and Field Team Sampling – August 18, 2004, evaluation areas 4.b and 4.c.

EVALUATION AREA 2.d RADIOLOGICAL ASSESSMENT AND DECISION MAKING FOR THE INGESTION EXPOSURE PATHWAY

EVALUATION AREA 2.e RADIOLOGICAL ASSESSMENT AND DECISION MAKING CONCERNING RELOCATION, RE-ENTRY AND RETURN

2.d.1 Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO's planning criteria. (NUREG-0654, J.9, J.11)

2.e.1 Timely relocation, re-entry and return decisions are made and coordinated as appropriate, based on assessments of the radiological conditions and criteria in the ORO's plan and/or procedures. (NUREG-0654, I.10, J.9, M.1)

PEMA Negotiated Extent of Play

The first session on August 17, 2004, will be held at PEMA Headquarters, Harrisburg, PA. – Room 230. On this day, the radiological assessment and protective action recommendations will be demonstrated. Participation in this first session will be limited to the technical staff which includes the BRP Accident Assessment staff, PEMA staff, Pennsylvania Department of Agriculture staff, and Federal technical support (DOE, USDA, NRC, EPA) who are participating. All communications with other locations will be simulated by a controller. The following summarizes each day's activities:

EXERCISE DAY 1 – August 17, 2004, 8:30 a.m.

This portion of the exercise will be conducted in a tabletop format. The time period is simulated to begin approximately 27 hours after a nuclear power plant accident at the Susquehanna Steam Electric Station (SSES). An initial message is given to players stating: plant is in a stable condition; all releases above technical specifications have been terminated; plant conditions; emergency phase plume pathway protective actions have been implemented; emergency phase ingestion pathway protective actions have been implemented; weather and meteorological conditions; plume phase field sampling results; FRMAC Advance Team and Advisory Group has

arrived at the State EOC; a DOE Aerial Measuring System flyover has been requested by the State and the results are provided; sample teams are activated, etc.

After the initial briefing, the players will be split into functional groups:

BRP: BRP will develop a strategy to identify and refine the plume deposition footprint, and identify Restricted Zones. Data on the deposition and mix of the deposition from analysis of soil and vegetation will be provided to BRP to aid in identification of the plume deposition footprint and Restricted Zone locations. Once the BRP technical staff has completed work on this area, summary tables and a map will be provided to BRP players indicating the plume deposition footprint and the Restricted Zone locations. The Restricted Zone will be there area in which re-entry requirements must be establish. This is also the basis for determining individuals that must be re-located and those that may return to their homes.

PDA/USDA: PDA/USDA staff will be given a map of the plume deposition footprint. They will then work to identify the agricultural commodities impacted.

DEP: DEP staff will be given a map of the plume deposition footprint. They will then work to identify the water supplies impacted.

Once BRP has identified the plume deposition footprint and Restricted Zones, PDA/USDA have identified the agricultural commodities impacted, and DEP has identified the water supplies impacted, the three groups will reassemble, and BRP will consult with PDA/USDA to develop an agricultural product initial monitoring plan, and with DEP to develop a water initial monitoring plan.

Once the agricultural product initial monitoring plan and water initial monitoring plan have been developed, sample analysis results will be provided by a controller. Two sample results each of milk, leafy vegetables, produce, and water will be provided to ensure that BRP can evaluate the data and determine which samples exceed the PAGs. At this point, summary tables and a map will be provided to the players which indicate where the PAGs are exceeded for the remaining areas. The technical staff playing in this portion of the exercise should then develop Protective Action Recommendations (PARs) for presentation to the State Recovery Task Force. This will conclude the activities for this session.

Timeline estimate

8:30-9:30 a.m. – ALL: Introduction and briefing. Presentation of the initial conditions and data.

9:30-11:00 a.m. – BRP: Identification of plume deposition footprint and Restricted Zone locations. Identify Re-entry requirements. Identify areas where citizens must be relocated and those area that were previously evacuated from that are acceptable for their return.

PDA/USDA and DEP: Identification of agricultural commodities impacted and water supplies impacted by plume deposition.

11:00-12:30 p.m. – ALL: Work on Agricultural Initial Monitoring Plan and Water Initial Monitoring Plan.

12:30-1:15 p.m. – Lunch.

1:15-2:00 p.m. -- BRP: Analysis of data from Agricultural and Water samples to determine if they exceed PAGs.

2:00-3:30 p.m. -- ALL: Development of PARs

EVALUATION AREA 4.b -- POST PLUME PHASE FIELD MEASUREMENTS AND SAMPLING

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

PEMA Negotiated Extent of Play

Players, controllers, and evaluators will assemble at the Columbia County Ag Extension Office at 9:30 a.m. on Wednesday August 18, 2004. A controller will simulate communications from the State EOC to the BRP Regional Program Manager, directing the dispatch of teams to various sample locations in areas which received deposition from the airborne plume and which are outside areas designated as Restricted Zones. Two sample teams will demonstrate and be evaluated. Sample locations will be chosen independent of the plume footprint to allow advance scheduling with farms and water suppliers. BRP Implementing Procedures will be followed. All communications between the sample teams and other locations (such as the State EOC, Regional Office, County EOCs and FRMAC) will be simulated with the controller.

The two teams will be briefed at the Columbia County Ag Extension office, and the controller will provide the teams with the specific sample requirements and location information that would typically be provided by the County EOC or FRMAC. Travel to the County EOC or FRMAC will be simulated.

One team will be designated an agricultural product field sampling team, and be composed of BRP health physics staff, DEP ER staff and PDA staff. After departing the Columbia County Ag office they will travel to a pre-designated farm. They will then go to the farm and collect two samples of each of the following: milk, leafy vegetation and soil. Upon completion of the sampling, the team will monitor themselves for contamination, complete appropriate documentation, leave the farm and simulate transporting the vehicles to the laboratory for analyses. The sample team will not be required to don any anti-contamination clothing, except gloves and/or booties.

The second team will be designated a water field sampling team, and be composed of BRP health physics staff, DEP ER Staff and DEP water program staff. After departing the Columbia County Ag office, they will stop and perform a soil sample and then travel to the pre-designated water sampling location. They will then go to the designated water sampling location and collect two samples of each of the following: public water supply water (finished water), and surface water. Upon completion of the sampling, the team will monitor themselves for contamination, complete appropriate documentation, leave the farm and simulate transporting the vehicles to the laboratory for analyses. The sample team will not be required to don any anti-contamination clothing, except gloves and/or booties. The sample team will not be required to don any anti-contamination clothing, except gloves. All play will be independent with other locations.

EVALUATION AREA 4.c. -- LABORATORY OPERATIONS

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

PEMA Negotiated Extent of Play

This objective was demonstrated during the TMI exercise May 22, 2001 at the DEP Radiation Measurements Laboratory, Harrisburg, PA, and no ARCAS were identified. This will not be demonstrated this exercise.

ATTACHMENT C

PREVIOUS ISSUES

I. Post Plume Exercise (Prior) Issues

Issue No.: LIMX88-06R (4.b.1) Commonwealth of Pennsylvania

Description: The water sampling teams were not fully briefed on the plume conditions and had no protective clothing, respirators, or radiation detection equipment. Also, they were not trained specifically for obtaining samples in a radiation situation/environment. (NUREG-0654, K.3.a.)

Response: *Commonwealth of Pennsylvania – Department of Environmental Protection Water Sampling Teams will conduct sampling during the August 18, 2004 Post Plume Exercise for SSES.*

Issue No.: LIMX88-07R (4.b.1) Commonwealth of Pennsylvania

Description: There was no obvious control of the time the samples were to be obtained to assure they represented the radioactivity which would have been deposited in the river; i.e., to maximize the usefulness of the data obtained. (NUREG-0654, I.10.)

Response: *Commonwealth of Pennsylvania – Department of Environmental Protection Water Sampling Teams will conduct sampling during the August 18, 2004 Post Plume Exercise for SSES.*

Issue No.: LIMX88-08R (4.b.1) Commonwealth of Pennsylvania

Description: Agricultural sampling teams were not notified in a timely manner by the Pennsylvania Department of Agriculture to report to the dispatch point at the Montgomery County EOC. Since team members did not report until the termination of the exercise, no agricultural sampling procedures could be demonstrated. Also, a prior inadequacy regarding team members use of dosimetry cannot be cleared since a demonstration of proficiency was not performed. (NUREG-0654, I.8.)

Response: *Commonwealth of Pennsylvania – Department of Agriculture Sampling Teams will conduct sampling during the August 18, 2004 Post Plume Exercise for SSES.*

Issue No.: 46-98-29-A-01 State EOC (Pennsylvania)

Description: A representative from the Department of Public Welfare did not participate in the State Response Task Force (SRTF). Consequently, issues concerning short- and long-term psychological impacts of the incident, and individual and family counseling for stress and other evacuation-related emotional or psychological problems, were not adequately addressed. (NUREG-0654, N.1.a.)

Response: All primary members of the SRTF have been requested to participate in the SSES Post Plume Exercise, August 19, 2004.

Issue No.: TMIX89-6R State EOC. Establishment of restricted areas.

Response: *The SSES Exercise to be conducted August 17-19, 2004 should provide ample opportunity for the Commonwealth of Pennsylvania to address and correct this prior issue.*

Issue No.: BVX92-25R State EOC.

Condition: No consideration given to non-routine agricultural concerns such as bee hives, orchards, fish farms, etc.

Response: *The SSES Exercise to be conducted August 17-19, 2004 should provide ample opportunity for the Commonwealth of Pennsylvania to address and correct this prior issue.*

II. Plume Exercise Issues (Prior)

Issue No.: 63-00-1.e.1-A-01

Condition: Teams 1 and 2 could not find two preselected monitoring locations and had difficulty finding other monitoring locations since the Field Team Coordinator (FTC) and the two field teams were using different maps with different monitoring locations posted on the maps.

Response: *Field Monitoring teams (Bureau of Radiation Protection) will operate and be evaluated during the SSES Plume Exercise October 26, 2004.*

Issue No.: 63-97-30-A-04 (1.a.1)

Description: The following municipality or township emergency operations centers (EOCs) failed to conduct one or more aspects of continuous, 24-hour staffing (complete position-for-position shift change and/or shift change briefing between outgoing and incoming staff members), as required by the extent-of-play agreement:

- a. Berwick Borough
- b. Briar Creek Borough
- c. Mifflin Township
- d. South Centre Township (NUREG-0654, A.4. and N.1.a.)

Response: *A 24-hour staffing roster will be demonstrated at the next biennial exercise.*

Issue No.: 63-02-1.c.1-A-01

Condition: Evacuation order information was not distributed to the Sugarloaf Township Emergency Operations Center (EOC) staff.

Response: *This criterion will be demonstrated at the next biennial exercise in which Sugarloaf Township is scheduled to be evaluated.*

Issue No.: 63-97-05-A-31 (3.a.1)

Description: Dosimetry briefings were not given for the EOC and TCP emergency workers at the Sugarloaf Township EOC. The Township plan (I.32) states: “At SAE the risk municipalities will distribute the (dosimetry) equipment and KI: (a) to all members of their own EOC staff and (b) to emergency organizations (usually fire companies, police departments, and ambulance services) who will then issue to their emergency workers.” (NUREG-0654, K.3.b.)

Response: *This criterion will be demonstrated at the next biennial exercise in which Sugarloaf Township is scheduled to be evaluated.*

Issue No.: 63-02-3.c.2-A-06

Condition: Initial notification of the drill events was not received at the Hazelton Area School District from the Luzerne County Emergency Operations Center (EOC) in a timely manner. Approximately 30 minutes after the scheduled start of the demonstration, the Transportation Department of the School District contacted the EOC to determine the status of the exercise.

Response: *This criterion will be demonstrated at the next biennial exercise in which Hazelton Area School District is scheduled to be evaluated.*

III. Planning Issues

Issue No.: 63-00-3.e.2-P-04

Condition: Annex E, Appendix 15, Ingestion Exposure Pathway Emergency Planning Zone, is not current. The Annex references the U.S. Food and Drug Administration (FDA) 1982 protective action guidelines (PAGs) and other dated information. According to FEMA HQ guidance, plans were to be updated by April 2000 with the new FDA guidance, including the changes to Derived Intervention Levels (DILs).

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-1.b.1-P-10

Condition: The Nescopeck Borough plan states that there are two relocation sites for the EOC if evacuation is required, but lists only one: Columbia-Montour Vocational-Technical High School.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-3.c.1-P-01

Condition: The Nuangola Borough Emergency Operations Plan (Spring 2002) contains conflicting information regarding hearing-impaired residents. Section XI (Notification and Resource Manual) of the Plan states there are no hearing impaired persons; however, Attachment F-3, Paragraph F.3.4, states that a list of hearing impaired residents is maintained in the EOC. This list contained one hearing impaired resident of Nuangola Borough.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-02

Condition: The Lackawanna County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-03

Condition: The Lackawanna County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-04

Condition: The Lycoming County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Issue No.: 63-02-6.a.1-P-05

Condition: The Lycoming County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-06

Condition: The Northumberland County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “the procedures for monitoring/decontamination teams for the support counties is the same as risk counties.”

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-07

Condition: The Northumberland County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-1.e.1-P-16

Condition: The plan does not designate a sufficient number of vehicle monitoring teams or survey instruments at the Schuylkill County monitoring/decontamination center at the Marian High School facility. Only one team is assigned to monitor the approximately 400 vehicles that will be present at the facility. The plan also does not designate a sufficient number of survey instruments with backups to the three centers, especially if more monitors are needed.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-6.a.1-P-17

Condition: The monitors at the Schuylkill County monitoring/ decontamination center at Marian High School conducted a background reading prior to beginning operations (in accordance with the County plan). This means that the monitors are subtracting gamma readings (0.04 mR/h) from the beta-gamma (open window) readings taken by the monitors.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-6.a.1-P-18

Condition: The Schuylkill County plan for the monitoring/ decontamination center at Marian High School does not clearly designate where the decontamination of vehicles will occur.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-6.a.1-P-19

Condition: The Schuylkill County plan and the set-up diagram included in the plan do not clearly identify how the operation will occur at the Schuylkill County

monitoring/decontamination center at Marian High School, especially if the site manager is unavailable.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-08

Condition: The Schuylkill County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-09

Condition: The Schuylkill County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-10

Condition: The Union County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-11

Condition: The Union County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-12

Condition: The Wyoming County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-6.a.1-P-13

Condition: The Wyoming County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-3.c.2-P-14

Condition: The reference to the host school in the Nescopeck school evacuation plan is not consistent with the references in the Berwick Area School District plan. Danville Elementary is not listed as a host school for the Berwick Area School District.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-3.c.2-P-21

Condition: There is conflicting information in the Columbia-Montour Area Vocation-Technical School plan and Central Columbia School District plan. (Please note that this conflict may exist in other jurisdictions as well. The Vo-Tech is comprised of students from numerous jurisdictions.)

Inconsistencies included the following: Section VI, Notification Procedures, B., states that the nurse will be notified of an emergency. In Section VII, Concept of Operations, B. Alert, 2., the Nurse is not mentioned. A new "Letter to Parents" has been written and issued but has not been added to the plan. The Transportation Contractors list has been updated but not added to the plan. It was also noted and discussed that the Concept of Operations lacks sufficient detail.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-02-3.c.2-P-15

Condition: The Crestwood Area School District Emergency Operations Plan, Luzerne County, dated February 1995, contains out-of-date information for the Emergency Telephone Directory and Letter of Agreement for School.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004.*

Issue No.: 63-00-3.c.2-P-23

Condition: The Wilkes-Barre Vo-Tech School plan has not been updated on an annual basis. The plan is undated and is over two years old. Training of appropriate staff and faculty has not been provided, and the plan has not been distributed to all appropriate personnel and agencies. The former principal's name appears on the plan.

Response: *Recommendations have been reviewed with the County and will be incorporated. Updated plans will be available for inspection prior to the Plume Exercise scheduled for October 26, 2004..*

IV. Additional Prior Issues

PRIOR ISSUES AT FUNCTIONAL ENTITIES NOT SCHEDULED TO BE DEMONSTRATED

Schuylkill County, Monitoring/Decontamination Center – Marion High School

Issue No.: 63-00-1.e.1-A-10

Condition: The Dosimetry/KI Report Form (PEMA-BOP-REP-3) was not properly completed at the Schuylkill County monitoring/decontamination center (Marian High School). Only one person's name and social security number was listed on the two completed forms. The name of each person issued a PRD, a total of 13 names, was listed on one of the two forms under the description column for the 0-20 R DRDs, and the serial numbers of the PRDs issued were listed under the serial number column.

Possible Cause: The individuals did not know the proper method for completing the Dosimetry/KI Report Form

Reference: NUREG-0654, K.3.a.

Effect: If the forms are not properly completed, there is no way of ensuring that a person has not exceeded his/her maximum allowed radiation exposure.

Recommendation: Individuals who are issued PRDs should receive additional training in the proper completion of the Dosimetry/KI Report Form. Each person should complete a Dosimetry/KI Report Form and place the serial number of the PRD under the TLD block on the form.

Issue No.: 63-00-6.a.1-A-11

Condition: Contamination control was not adequately demonstrated at the Schuylkill County monitoring/ decontamination center at Marian High School. Two individuals with 1.5 mR/h contamination on both hands, placed their hands on an uncovered wall while trying to maintain balance during the monitoring of their shoe soles.

Possible Cause: The wall was not covered.

Reference: NUREG-0654, J.12.

Effect: The procedure used by the monitors could enable spread of radiological contamination throughout the facility and onto other individuals being monitored.

Recommendation: Some means should be developed and implemented to ensure that contaminated hands placed on the wall will not result in the possible spread of contamination to others touching the wall either while being or after being monitored. The setup diagram and procedures for the center should reflect this change.

APPENDIX 4. EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events used as the basis for invoking emergency response actions by OROs during the SSES exercise on August 17-19, 2004 Ingestion Exercise, the October 6, 2004 out-of-sequence demonstrations, and the October 26, 2004 plume exercise.

This exercise scenario was submitted by the Commonwealth of Pennsylvania. The scenario was approved by FEMA Region III on July 15, 2004.

Scenario Narrative

A. Narrative Summary

The scenario starts with SSES Unit 1 at 100% power. Unit 2 is also at 100% power. Routine work is in progress on both units.

U1 turnover items:

- 1) "B" Turbine Building chiller is out of service for PM's.
- 2) Containment nitrogen usage has increased slightly, a CIG investigation is in progress.
- 3) "B" loop Containment Spray Valves (HV151 F027B and HV151 FO16B) re out of service for maintenance.

U2 turnover items:

- 1) NSE is evaluating a resolution of the service air/instrument air cross tie pressure control issue.

Common turnover items:

- 1) "E" diesel has been substituted for the "C" diesel.
- 2) RWMU screen cleaning is in progress.

The scenario begins with a report that a truck that was traveling north on the road behind the turbine buildings has crashed into the CW pumphouse. The impact has caused damage to that structure, including breaking through the ventilation louvers on the eastern side of the CW pumphouse and pushing the ventilation louvers into the diesel-driven fire pump. The diesel engine on the fire pump appears to be damaged from the impact. An Unusual Event is declared per EAL OU3.

Later, the "A" Recirc pump loses a piece of its impeller, causing a high pump vibration condition. The loose parts cause damage to one of the associated jet pumps and are eventually discharged into the reactor core. Subsequently the "A" recirc pump trips as a result of the high vibration. Loose parts in the reactor vessel begin to cause fretting of the fuel cladding. Later, the remaining Reactor Recirculation pump is tripped due to elevated motor winding temperatures. The loose parts settle in the core and cause flow obstructions. Later in the scenario, this results in cladding failure. At approximately the same time indications are received that a small LOCA has

occurred in the drywell. The leak is in a non-isolable section of recirc piping. Containment radiation level increases slightly, and drywell pressure exceeds the 1.72 psig isolation setpoint. The reactor scrams and all control rods fully insert. The containment isolation goes as required.

An alert is declared based on EAL FA1 (Loss of the RCS barrier). Feedwater and RCIC are used for controlling Reactor water level. Reactor pressure is controlled using Turbine Bypass valves, HPCI and SRV's as needed. RHR is placed in suppression pool cooling, and the reactor is depressurized within administrative limits.

If plant operators attempt to use containment sprays, the spray valves fail to open. Teams that are sent to recover the A or B loop spray valves will not be successful. The "B" loop Suppression Pool spray valve is out of service for maintenance, and the remaining spray valves fail to open for a variety of reasons including separation of the disk from the stem and mechanical binding.

Subsequently, a leak occurs in the HPCI room steam line piping. The high temperature isolation set points and HPCI area max safe temperatures are exceeded, but the leak cannot be isolated. A Site Area Emergency is declared per EAL FS1 (Loss of RCS and Primary Containment barriers).

The leak is small, the steam condenses in the HPCI room (condensation is enhanced by the actuation of the fire protection deluge system in the HPCI room). Blowout panels do not open. The Reactor Building HVAC is in the re-circulation mode and the Stand-by Gas Treatment System (SBGTS) is in service. The release is from the RB SBGTS flow path and is monitored and filtered. Efforts are directed toward isolating the leak into the Reactor Building. The in-plant teams that are dispatched to make the repairs will not be permitted to achieve isolation of the leak flow path. However these teams will be judged to have successfully demonstrated the team dispatch function if they arrive at the designated work location properly dressed out and having the tools necessary to accomplish their assigned work activity within the time frame specified in the scenario.

The degraded fuel cladding mentioned above now begins to fail, releasing fission products to the coolant. Containment radiation levels exceed 3000R/Hr and fuel damage estimates are approximately 30% cladding damage.

A General Emergency is declared per EAL FG1 (loss of all three fission product barriers.) The radioactive release rate increases due to the cladding damage and an increase in size of the HPCI steam leak, but continues to be treated by SBGTS. The SPING is lost, and the release becomes un-monitored. Dose projections support a PAR to evacuate from 0-2 miles and shelter from 2-10 miles. Shortly thereafter, dose projection calculations will also support a General Emergency declaration per EAL RG-1.

The Reactor will be rapidly depressurized, but because the RCS pressure was already reduced due to the cooldown process, this action has only a little affect on the release. Actions are still directed toward isolating the leak.

The exercise is ended when all exercise objectives have been met.

APPENDIX 5. PLANNING ISSUES

This appendix contains the Planning Issues assessed during the August 17-19 2004 Ingestion Exercise and the October 26, 2004 plume exercise as SSES and prior planning issues from previous exercise that remain unresolved as well as prior planning issues that were resolved during the August 17-19 2004 Ingestion Exercise or the October 26, 2004 plume exercise.

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.

State Response: All identified "Planning Issues" are in the process of being considered, reviewed and addressed through the next annual plan review. The changes deemed appropriate will be incorporated in the Plans.

New Planning Issues

Commonwealth of Pennsylvania

Issue For Criterion: 63-04-4.a.3-P-01

Condition At 1850, Field Monitoring Team B initiated the collection of airborne particulates and radioiodines with the air sampler positioned under a massive tree with a broad, dense leaf canopy.

Several of the pre-identified monitoring sites did not have adequate space to park the monitoring vehicle off the road and allow for safe access.

Possible Cause: Failure of BRP-ER-6.01Rev. 1, 07/04, Section 6, Air Sample Collection, to define citing criteria for air sample collection.

Failure to identify monitoring sites that do not have adequate space to park the monitoring vehicle off the road and safe access.

Reference: NUREG-0654: 1.9; BRP-ER-6.01Rev. 1, 07/04, Section 6

Effect: Sampling a plume for airborne particulates and radioiodines while under a massive tree with a broad, dense leaf canopy could alter the plume's direction and movement and the leaf canopy could also impact deposition resulting in the collection of non-representative samples. This could impact the dose assessment/public protective action process.

Those pre-identified monitoring sites that do not have adequate parking available and safe access could create a safety hazard that could result in severe injury or death.

Recommendation: Modify BRP plans and procedures to include proper siting criteria for plume sampling and ambient radiation monitoring that includes a requirement for an open space away from trees and structures. In addition, pre-identified monitoring sites should be locations with adequate off-road parking and safe access.

Issue For Criterion: 63-04-2.a.1-P-02

Condition: The BRP Plan, BRP-ER-7.3.2.2, Rev. 1, 07/04, page 5, KI Administration, states, "BRP will recommend to DOH that KI be administered to the general public, emergency workers and special groups when a General Emergency is declared ... or a projected child thyroid dose of > 5 rem CDE." In contrast, the Commonwealth of Pennsylvania Plan, Appendix 5, Annex E, Section 6-C page E-5-5, Radiological Exposure Control, states, "KI should be taken only on the advice of the Secretary of the Pennsylvania Department of Health. The projected dose that triggers this advice is 25.0 Rem CDE to the adult thyroid." Also, in Appendix 5, Annex E, Section 3-B Pennsylvania Department of Health Policies on KI, pages E-5-38 and E-5-39, states, "Dose projection criterion [for recommending KI to emergency workers] is 25.0 rem CDE adult thyroid.

Possible Cause: The projected thyroid dose that warrants a recommendation to emergency workers to ingest KI is not consistent in all sections of the Pennsylvania Bureau of Radiation Protection Emergency Plan. In addition, the inconsistencies are a result of sections of the Plan based on out-dated U.S. Food and Drug Administration guidance.

Reference: NUREG-0654: J.10.e Plan, BRP-ER-7.3.2.2, Rev. 1, 07/04; Appendix 5, Annex E, Section 6-C; Appendix 5, Annex E, Section 3-B

Effect: Significantly different levels of projected thyroid CDE that warrants a recommendation for emergency workers to ingest KI located in various sections of the Plan could cause confusion in when to recommend KI.

In addition, if guidance from Appendix 5 is followed and since emergency workers must be over the age of 18, some emergency workers may not ingest KI when warranted and some (over the age of 40) will ingest KI when not warranted.

Recommendation: Modify State plan to be consistent and appropriate in all sections.

Columbia County

Issue No.: 63-04-1.a.1-P-03

Condition: Verification procedure of messages from State EOC caused unnecessary delay in Columbia County taking appropriate action(s).

Possible Cause: Failure to update plan.

Reference: Columbia County Emergency Management Agency Radiological Emergency Response Plan, Appendix 2, page A2-4 and Appendix 3, and page A3-2.

Effect: Delay in implementing Protective Action Decisions to the public in a timely manner.

Recommendation: Update the plan to require verification ONLY if the message is received over regular telephone line or radio. Verification should NOT be required if the message is received over dedicated telephone line or SEVAN.

Luzerne County

Issue No.: 63-04-5.a.1-P-04

Condition: Route Alerting (Route #3) for Nanticoke City took approximately 1 ½ hours to complete.

Possible Cause: Route #3 demonstrated by the Nanticoke City Fire Department is four miles long.

Reference: 10 CFR Part 50, Appendix E.IV.D and New REG 0654, E.5,6,7

Effect: The length of the route may impede a timely notification of the public and the special populations.

Recommendation: Conduct a time assessment of the current routes and develop additional routes as necessary.

Prior Planning Issues Unresolved

Central Columbia Area School District

Issue No.: 63-00-3.c.2-P-21

Condition: There is conflicting information in the Columbia-Montour Area Vocation-Technical School plan and Central Columbia School District plan. (Please note that this conflict may exist in other jurisdictions as well. The Vo-Tech is comprised of students from numerous jurisdictions.)

Inconsistencies included the following: Section VI, Notification Procedures, B., states that the nurse will be notified of an emergency. In Section VII, Concept of Operations, B. Alert, 2., the Nurse is not mentioned. A new "Letter to Parents" has been written and issued but has not been added to the plan. The Transportation Contractors list has been updated but not added to the plan. It was also noted and discussed that the Concept of Operations lacks sufficient detail.

Reason ARCA Unresolved: Prior issue 63-00-3.c.2-P-21 was only partially resolved during the Out Of Sequence Exercise on October 26, 2004. The conflict in the Radiological Emergency Response Plan (RERP) for CCSD for incidents at Susquehanna Steam Electric Station (SSES) concerning notification of the nurse has been resolved. The RERP "Letter to Parents" is not the current issue. CCSD personnel stated that this letter is changed on an annual basis. The RERP list of students, arranged by buss stop who reside within the EPZ is not the current issue. This list is also changed on an annual basis.

All of the three schools within the CCSD use the same RERP. Three copies of the CCSD RERP were reviewed, two at the district office and one at the CCSD Elementary School. They all had the same problem as listed under the above prior issue.

Recommendation: Coordinate plan changes between CCSD and plan revisors, to ensure current year information is contained within annual plan review and revision.

Prior Planning Issues Resolved

Lackawanna County Mass Care Center – Monitoring / Decontamination (Penn. State University)

Issue No.: 63-02-6.a.1-P-02

Condition: The Lackawanna County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the "established limit" but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that "procedures for monitoring/ decontamination teams for the support counties is the same as risk counties."

Corrective Action Demonstrated: Lackawanna County Emergency Management Agency Emergency Operations Plan - Annex E was revised in 2004 to include the addition of numerical contamination action levels for evacuees, vehicles, and equipment.

Appendix 4, Section 2.B, Decontamination or Release Criteria Decision specifies the following limits:

Portal Monitors:

Portal monitors that meet the FEMA Portal Monitor Standard (REP-21) may be used for personnel monitoring.

Hand Held Instruments:

For CDV-700 – if greater than 300 cpm is detected while monitoring an individual, vehicle or equipment, decontamination procedures will be initiated. Instrumentation with pancake detectors – if greater than 300 cpm above background is detected while monitoring an individual, vehicle or equipment, decontamination procedures shall be initiated.

Issue No.: 63-02-6.a.1-P-03

Condition: The Lackawanna County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Corrective Action Demonstrated: Lackawanna County Emergency Management Agency Emergency Operations Plan - Annex E was revised in 2004 to clarify the process for vehicle monitoring. Appendix 4, Attachment H, includes a flowchart for vehicle processing at monitoring and decontamination centers. Using the flowchart, evacuee vehicles are directed to a parking area upon evacuee arrival at the monitoring/decontamination facility. Vehicles of contaminated evacuees are monitored/decontaminated, after the evacuees have been monitored. Appendix 4, Section 1.A states, “Monitoring of evacuees should be completed as soon as possible while monitoring of vehicles can be accomplished after the evacuees have been processed.”

Hughesville High School

Issue No.: 63-02-6.a.1-P-04

Condition: The Lycoming County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading

exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that, “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Corrective Action Demonstrated: Contamination limits for evacuees are specified in Attachment F of Appendix 4 of Annex E to the Lycoming County Emergency Management Agency’s Emergency Operations Plan. These limits are 300 counts per minute (CPM) with the CDV 700 and 300 CPM above background with instruments using pancake probes. These limits appear on pages E-4-5, E-4-38, E-4-42 and E-4-44 of the Spring, 2004 procedures.

This issue has been satisfactorily resolved.

Issue No.: 63-02-6.a.1-P-05

Condition: The Lycoming County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Corrective Action Demonstrated: Procedures for monitoring of vehicles is specified in Attachment H of Appendix 4 of Annex E to the Lycoming County Emergency Management Agency’s Emergency Operations Plan (EOP). Item B. 1. On page E-4-49 of the Spring, 2004 procedures states, “Vehicle Occupants must be monitored prior to monitoring vehicles. There are no conflicting procedures in this version of the EOP. This issue has been satisfactorily resolved.

Northumberland Reception/Mass Care Center

Issue No.: 63-02-6.a.1-P-06

Condition: The Northumberland County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that, “the procedures for monitoring/decontamination teams for the support counties is the same as risk counties.”

Corrective Action Demonstrated: Prior issue 63-02-6.a.1-P-06 has been resolved. The Northumberland County Emergency Management Agency (NCEMA) Emergency Operations Plan – Annex E (NCEOP) Appendix 4 Monitoring Decontamination Procedure (MDP) has been

revised to include contamination limit values. The NCEOP Appendix 4 MDP Section 2, page E-4-5, steps B 1, b 2 and B 1, b 3 list in each a decontamination limit of 300 counts per minute for evacuees. The noted statement above concerning support and risk counties has been deleted.

Issue No.: 63-02-6.a.1-P-07

Condition: The Northumberland County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Corrective Action Demonstrated: Prior issue 63-02-6.a.1-P-07 has been resolved. The Northumberland County Emergency Management Agency (NCEMA) Emergency Operations Plan – Annex E (NCEOP) Appendix 4 Monitoring Decontamination Procedure (MDP) has been revised with respect to vehicle monitoring. The NCEOP Appendix 4 MDP Section 1, step A 1 states that the monitoring of evacuees should be completed as soon as possible while monitoring of vehicles can be accomplished after the evacuees have been processed. . The NCEOP Appendix 4 MDP Section 1, step B states that the monitoring procedures and record keeping are identical for people who stay or do not stay at mass care centers. The brief discussion on how to monitor a parking lot full of vehicles has been deleted.

Schuylkill County Emergency Operations Center

Issue No.: 63-02-6.a.1-P-08

Condition: The Schuylkill County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Corrective Action Demonstrated: The EOP, revision 9, dated Summer 2004 now specifies on pages E-4-5 and E-4-45 that the threshold for decontamination of an evacuee is 300cpm above background.

Issue No.: 63-02-6.a.1-P-09

Condition: The Schuylkill County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Corrective Action Demonstrated: The EOP, revision 9, dated Summer 2004 now clarifies on page E-4-55 the directions for the monitoring of vehicles.

Schuylkill County Mass Care Center – Monitoring and Decontamination Center

Issue No.: 63-00-1.e.1-P-16

Condition: The plan does not designate a sufficient number of vehicle monitoring teams or survey instruments at the Schuylkill County monitoring/decontamination center at the Marian High School facility. Only one team is assigned to monitor the approximately 400 vehicles that will be present at the facility. The plan also does not designate a sufficient number of survey instruments with backups to the three centers, especially if more monitors are needed.

Corrective Action Demonstrated: The Schuylkill County plan, Change 4, Spring, and Change 9, Summer, designated a sufficient number of vehicle monitoring teams and survey instruments with backups for the three centers.

Issue No.: 63-00-6.a.1-P-17

Condition: The monitors at the Schuylkill County monitoring/ decontamination center at Marian High School conducted a background reading prior to beginning operations (in accordance with the County plan). This means that the monitors are subtracting gamma readings (0.04 mR/h) from the beta-gamma (open window) readings taken by the monitors.

Corrective Action Demonstrated: The monitors at the Schuylkill County monitoring/decontamination center at Tamaqua High School conducted a background reading prior to beginning operations in accordance with the County plan. The background reading was 45.7 counts per minute (cpm).

Issue No.: 63-00-6.a.1-P-18

Condition: The Schuylkill County plan for the monitoring/ decontamination center at Marian High School does not clearly designate where the decontamination of vehicles will occur.

Corrective Action Demonstrated: The Schuylkill County plan for the monitoring/decontamination center at Tamaqua High School designated the High School parking lot as the location where vehicles would be monitored. If a vehicle was contaminated it would be moved to the football field where decontamination would occur.

Issue No.: 63-00-6.a.1-P-19

Condition: The Schuylkill County plan and the set-up diagram included in the plan do not clearly identify how the operation will occur at the Schuylkill County monitoring/decontamination center at Marian High School, especially if the site manager is unavailable.

Corrective Action Demonstrated: The Schuylkill County local protocol plan included a set-up diagram, which identified how the operation would occur at the monitoring/decontamination center at Tamaqua High School.

Union County

Issue No.: 63-02-6.a.1-P-10

Condition: The Union County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Corrective Action Demonstrated: The Union County Emergency Operations Plan (EOP) as specified in change 3, Summer 2004, in Appendix 4, Attachment F, Number 2, section i., and also located in Tab A, specifies contamination limits for evacuees.

Issue No.: 63-02-6.a.1-P-11

Condition: The Union County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that

persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Corrective Action Demonstrated: The Union County Emergency Operations Plan (EOP) as specified in change 3, Summer 2004, in Appendix 4, Attachment H, Section D, provides specific guidelines and procedures for the monitoring of vehicles.

Wyoming County

Issue No.: 63-02-6.a.1-P-12

Condition: The Wyoming County Emergency Operations Plan (EOP) does not specify a contamination limit for evacuees. The procedure indicates what action to take if the reading exceeds the “established limit” but does not give a numerical value (E-4-4). The procedure does give contamination limits for vehicles (E-4-8). It should be noted that E-4-3 states that “procedures for monitoring/ decontamination teams for the support counties is the same as risk counties.”

Corrective Action Demonstrated: This planning issue has been corrected. Revised plans have been developed and put in place which clearly indicate contamination limits for evacuees. The revised plans were available in the Wyoming County Emergency Operations Center (EOC), and appropriately posted to the “Wyoming County Emergency Operations Plan, Annex E, County Support Procedures for Nuclear Power Plant Incidents”.

Issue No.: 63-02-6.a.1-P-13

Condition: The Wyoming County Emergency Operations Plan (EOP) has conflicting direction regarding the monitoring of vehicles.

Page E-2 implies that all vehicles will be monitored and segregated (based on clean or contaminated) when they arrive at the monitoring/ decontamination facility. Page E-4-20 indicates that vehicles will be monitored after evacuees are monitored. Page E-4-1 says that persons who wish to be monitored but do not intend to stay will be extended the services. Page E-4-7 provides a brief discussion of how to monitor a parking lot full of vehicles.

Corrective Action Demonstrated: This planning issue has been corrected. Revised plans have been developed and put in place. They provide clear, unambiguous directions for vehicle monitoring. The revised plans were available in the Wyoming County Emergency Operations Center (EOC), and appropriately posted to the “Wyoming County Emergency Operations Plan, Annex E, County Support Procedures for Nuclear Power Plant Incidents”.

Columbia Montour Area Vo-Tech School

Issue No.: 63-00-3.c.2-P-21

Condition: There is conflicting information in the Columbia-Montour Area Vocation-Technical School plan and Central Columbia School District plan. (Please note that this conflict may exist in other jurisdictions as well. The Vo-Tech is comprised of students from numerous jurisdictions.)

Inconsistencies included the following: Section VI, Notification Procedures, B., states that the nurse will be notified of an emergency. In Section VII, Concept of Operations, B. Alert, 2., the Nurse is not mentioned. A new "Letter to Parents" has been written and issued but has not been added to the plan. The Transportation Contractors list has been updated but not added to the plan. It was also noted and discussed that the Concept of Operations lacks sufficient detail.

Corrective Action Demonstrated: Inconsistencies in the Radiological Emergency Response Plan (RERP) for the Columbia-Montour Vocational-Technical School for Incidents at the Susquehanna Steam Electric Station have been reconciled as follows:

1. Notification of the School Nurse which had not been mentioned, is now included in Paragraph VI.B. of the RERP.
2. The "Letter to Parents" template is now included in the RERP.
3. The Transportation Contractors List template is now included in the RERP.

Crestwood School District

Issue No.: 63-02-3.c.2-P-15

Condition: The Crestwood Area School District Emergency Operations Plan, Luzerne County, dated February 1995, contains out-of-date information for the Emergency Telephone Directory and Letter of Agreement for School.

Corrective Action Demonstrated:

The emergency telephone directory was updated as provided on page 19, Crestwood School District Emergency Operations Plan. The updated plan and list is augmented with an organizational list for the school district, which provides additional support contact numbers. The Letter of Agreement was discussed as having been updated, but not positively identified.

Wilkes-Barre Vo-Tech School

Issue No.: 63-00-3.c.2-P-23

Condition: The Wilkes-Barre Vo-Tech School plan has not been updated on an annual basis. The plan is undated and is over two years old. Training of appropriate staff and faculty has not been provided, and the plan has not been distributed to all appropriate personnel and agencies. The former principal's name appears on the plan.

Corrective Action Demonstrated: The School Emergency Plan was updated in August 2004. By interview with the Principal, it was determined that staff training on the plan was performed during in-service time at the start of the school year in August.

Nescopeck Borough

(This site was not scheduled to be demonstrated but participated solely to resolve one prior planning issue)

Issue No.: 63-00-1.b.1-P-10

Condition: The Nescopeck Borough plan states that there are two relocation sites for the EOC if evacuation is required, but lists only one: Columbia-Montour Vocational-Technical High School.

Corrective Action Demonstrated:

On October 26, 2004 the Emergency Management Coordinator demonstrated that the Nescopeck Borough Emergency Operations Plan (page A 5 reference A 4.2), as amended January 2004, now specifies only one location and that is the Columbia-Montour Vocational-Technical High School.

Berwick Area School District - Danville Elementary School

(This site was not scheduled to be demonstrated but participated solely to resolve a prior planning issue)

Issue No.: 63-02-3.c.2-P-14

Condition: The reference to the host school in the Nescopeck school evacuation plan is not consistent with the references in the Berwick Area School District plan. Danville Elementary is not listed as a host school for the Berwick Area School District.

Corrective Action Demonstrated: On October 26, 2004 The Crisis Coordinator for the Berwick Area School District demonstrated the amended (August 9, 2004) Radiological Emergency Response Plan for the Berwick Area School District. Page 10 now states that the Nescopeck Elementary School evacuates to the Danville Elementary School.

The Radiological Emergency Response Plan for Nescopeck Elementary (page 32) now also lists Danville Elementary as the evacuated location.

APPENDIX 6: UNRESOLVED ARCAS

This appendix contains the ARCAs assessed during the August 17-19 2004 Ingestion Exercise and the October 26, 2004 plume exercise as SSES. There are no prior ARCAs from previous exercises that remain unresolved.

Unresolved ARCAs Assessed During the August 17-19 2004 Ingestion Exercise and the October 26, 2004 Plume Exercise As SSES

Commonwealth of Pennsylvania

Pennsylvania EOC

(This issue was demonstrated at site 2.1.2: Emergency Worker Monitoring/ Decontamination at Central Columbia High School. The Issue has been assessed to the Pennsylvania Emergency Management Agency (PEMA))

Issue For Criterion: 63-04-1.e.1-A-01

Description: The Commonwealth of Pennsylvania Bureau of Radiation Protection (BRP) did not assure that the Columbia County Radiological Monitoring and Decontamination Procedure for the Ludlum Model 52 Portal Monitor include a preoperational source check at several points along the vertical line centered between the two side columns of the monitor.

Possible Cause: Preoperational portal monitor source checks are performed by placing a 0.75 microcurie Cs-137 source on the face of each Geiger-Moeller detector. This ensures that each detector responds to a radioactive source and will alarm. This practice does not test the “prior to use” preoperational capability of the monitor to detect surface contamination with a widespread non-uniform distribution. Discussion with a utility representative indicates that a source check for the monitor’s response to a one (1) microcurie Cs-137 source is performed as part of the monitor’s annual recalibration. This is inconsistent with the “prior to use” source check criterion for hand held survey instruments. In accordance with the SOP, Ludlum Model 2241-2 survey meters (with the same detector type) are source checked prior to use. The instruments must respond to the check source, with the response and meet acceptance criteria located on the side of the instrument.

Reference: FEMA REP-21 (March 1995), NUREG-0654 J.12

Effect: The current preoperational source methodology does not test the capability of the monitor to detect surface contamination with a widespread non-uniform distribution.

Recommendation: The Commonwealth of Pennsylvania Bureau of Radiation Protection (BRP) should modify the Standard Operating Procedure to include the requirement to perform a

preoperational source check, at several points along the vertical line centered between the two side columns of the portal monitor (between 0.5 and 5.5 feet above the base).

Schedule of Corrective Actions: The Pennsylvania Department of Environmental Protection – Bureau of Radiation Protection has been in contact with the manufacturer of the Ludlum Model 52 Portal Monitor. The specified device does in-fact meet or exceed the FEMA REP-21 (March 1995) and NUREG-0654 J.12 requirements. At the request of the Bureau of Radiation Protection, the manufacturer is making modifications to the Standard Operating Procedure which indicates that a series of three (3) operational checks is to be conducted using a 1 uCi Cesium-137 check source on “Center-line” at various levels ranging from “ankle height”, waist level and head height. All locations utilizing portal monitors, regardless of the manufacturer, will use a similar procedure and a 1 uCi CS-137 check source.

State Field Monitoring Team 1

Issue No.: 63-00-1.e.1-A-01

Condition: Teams 1 and 2 could not find two preselected monitoring locations and had difficulty finding other monitoring locations since the Field Team Coordinator (FTC) and the two field teams were using different maps with different monitoring location posted on the maps.

Reason ARCA Unresolved: FMT 1, and FMT 2, had a book of maps showing the pre-selected sampling locations in the emergency planning zone (EPZ) that had been recently provided. Based on interviews with the FMT members, this set of maps was an improvement on the previously maps; however, several problems with the new maps were identified. Some of the roads where sample locations were located did not have road names on the maps. Another sampling location was shown in a different location that that identified by the tag on the power pole.

Another sampling location was shown as being on the wrong road. Because of these issues with the new maps, a previously ARCA, 63-00-1.e.1-A-01, remains unresolved. The maps being used by the FTC were not observed.

Recommendation: Review and modify maps to assure that roads on which sampling locations are located have names on the maps. Assure that the sampling locations designated on the maps are consistent with the locations designated by the plaques on the power poles for the individual sampling locations and that the road designations are correct for all sampling locations.

It is suggested that there be a written narrative description of the sampling locations. Power poles are replaced periodically and the plaques showing the sampling location designation may be lost. Written descriptions should include an odometer distance from an easily recognized point. Consideration should be given to the use of global positioning system (GPS) hardware by the teams with the designation of latitude and longitude of each sampling location being provided in a procedure or table.

Schedule of Corrective Actions: The Bureau of Radiation Protection (BRP) will move to a system of locating the field teams sampling using GPS instead of fixed monitoring locations. The fixed monitoring locations will be included in future maps as only reference points. The actual sampling locations will be identified using supplied Global Positioning devices. This system will be in place by the 11/05 LGS Exercise.

State Field Monitoring Team 2

Issue No.: 63-00-1.e.1-A-01

Description: Teams 1 and 2 could not find two preselected monitoring locations and had difficulty finding other monitoring locations since the Field Team Coordinator (FTC) and the two field teams were using different maps with different monitoring location posted on the maps.

Reason ARCA Unresolved: FMT 1, and FMT 2, had a book of maps showing the pre-selected sampling locations in the emergency planning zone (EPZ) that had been recently provided. Based on interviews with the FMT members, this set of maps was an improvement on the previously maps; however, several problems with the new maps were identified. Some of the roads where sample locations were located did not have road names on the maps. Another sampling location was shown in a different location that that identified by the tag on the power pole.

Another sampling location was shown as being on the wrong road. Because of these issues with the new maps, a previously ARCA, 63-00-1.e.1-A-01, remains unresolved. The maps being used by the FTC were not observed.

Recommendation: Review and modify maps to assure that roads on which sampling locations are located have names on the maps. Assure that the sampling locations designated on the maps are consistent with the locations designated by the plaques on the power poles for the individual sampling locations and that the road designations are correct for all sampling locations.

It is suggested that there be a written narrative description of the sampling locations. Power poles are replaced periodically and the plaques showing the sampling location designation may be lost. Written descriptions should include an odometer distance from an easily recognized point. Consideration should be given to the use of global positioning system hardware by the teams with the designation of latitude and longitude of each sampling location being provided in a procedure or table.

Schedule of Corrective Actions: The Bureau of Radiation Protection (BRP) will move to a system of locating the field teams sampling using GPS instead of fixed monitoring locations. The fixed monitoring locations will be included in future maps as only reference points. The actual sampling locations will be identified using supplied Global Positioning devices. This system will be in place by the 11/05 LGS Exercise.

School Districts

Columbia County School District - Benton Area S.D. (*L.Ray Appleman ES*)

Issue No.: 63-04-3.C.2-A-04

Description: The Benton Area School District Superintendent's Office (SO) was not prepared for this Drill. The superintendent was not present, and his staff was not familiar with the Emergency Response Plan (ERP). The SO had no list of those students who live within the EPZ.

In addition, the facsimiles received from the Columbia County Emergency Operation Center (EOC), regarding Emergency Classification Levels (ECLs), were not forwarded to the principal's office.

Also, the L. Ray Appleman Elementary School (ES) principal was not familiar with the ERP, and was unsure what to do with students who live within the EPZ.

The Emergency Response Plans (ERPs) available at the SO and ES were outdated.

Possible Cause: Unfamiliarity with the Emergency Response Plan, and lack of coordination among the SO, schools and EOC.

Reference: J.10.c,d,g

Effect: If this had been an actual emergency, considerable confusion would have resulted for the students and their parents who live within the EPZ.

Recommendation: When new or updated plans are issued, copies should be made available to the superintendent, all school principals, and their staffs. Personnel in these offices should become familiar with the plan and their responsibilities. Coordination among the SO, schools, and EOC should be improved for drills, exercises and in the event of an actual disaster.

Schedule of Corrective Actions: The updated plan (Change 15 – 2004) had been provided to the Benton Area School District in early 2004. Unfortunately, the primary point of contact for the School District with regard to emergency plans and procedures was not available for the exercise. Meetings and training will be conducted for the School District to increase the level of understanding and stress the areas of responsibility of the District Office and the affected schools. This ARCA is scheduled to be corrected during the next regularly scheduled SSES Exercise (September 2006).

Luzerne County School District - Hazelton Area S.D. (*Valley ES*)

Issue No.: 63-02-3.c.2-A-06

Description: Initial notification of the drill events was not received at the Hazelton Area School District from the Luzerne County Emergency Operations Center (EOC) in a timely manner. Approximately 30 minutes after the scheduled start of the demonstration, the Transportation Department of the School District contacted the EOC to determine the status of the exercise.

Reason Arca Unresolved: At 0915 the Luzerne County Emergency Operation Center (LCEOC) was transmitting a message via radio to the risk school districts. The Hazelton Area School District did not get the alert message clearly over the radio. The only portion of the message that was heard by the School District was the role-call, confirmation request by LCEOC at the end of the message. The School District Security Coordinator made several attempts to transmit a reply that the message was not received. When communications was not established, the LCEOC used telephone as the back-up system to inform the school district of the Alert status. Prior issue No., 63-02-3.c.2-A-06, reflected the same breakdown in communications. Due to the problem with the radio equipment at this drill the prior issue is not resolved.

Recommendation: Check the radio equipment for operability and either fix it or replace it with another radio.

Schedule of Corrective Actions: The radio equipment will be checked by the Luzerne County Emergency Management Agency and modified or replaced as necessary. The County will also follow up with training and will conduct communications drills to increase the level of confidence. This ARCA is scheduled for correction during the next regular SSES Exercise (September 2006).