



Federal Emergency Management Agency

Region III
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Philadelphia, PA 19106-4404

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Mr. Hubert J. Miller
Regional Administrator
Region I
United States Nuclear Regulatory Commission
King of Prussia, PA 19406

Dear Mr. Miller:

The final exercise report for Susquehanna Steam Electric Station (SSES) Plume exercise conducted on November 1, 2000, is enclosed. This exercise served as national pilot for purposes of testing the newly proposed Evaluation Area Methodology for the Radiological Emergency Preparedness (REP) program.

If you have any question, please contact either Mr. Henry Skoczalek at 215.931.5566, or me.

Sincerely,

A handwritten signature in black ink, appearing to read "Kevin Koob". The signature is stylized and cursive.

F. Kevin Koob
Chairperson, Regional
Assistance Committee

Enclosure



Final Exercise Report
Susquehanna Steam Electric Station

Licensee: PPL Susquehanna LLC
Exercise Date: October 3 and November 2, 2000
Report Date: February 2, 2001

**FEDERAL EMERGENCY MANAGEMENT AGENCY
ONE INDEPENDENCE MALL, 6TH FLOOR
615 CHESTNUT STREET
PHILADELPHIA, PENNSYLVANIA 19106-4404**

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1. EXECUTIVE SUMMARY

On October 3 and November 2, 2000, the Federal Emergency Management Agency (FEMA), Region III, conducted an exercise in the plume exposure pathway emergency-planning zone (EPZ) 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. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP). The most recent exercise at this site was conducted on October 28-29, 1997.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania; the risk counties of Columbia and Luzerne; the support counties of Lackawanna, Lycoming, Montour, Northumberland, Schuylkill, Union, and Wyoming; and the 12 municipalities that participated in this exercise. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants were evident during this exercise.

This report contains the final evaluation of the biennial exercise and the evaluation of certain out-of-sequence activities. The biennial exercise was held on the evening of November 2, 2000. The emergency response capabilities of affected school districts were demonstrated on the morning of November 2, 2000. The capabilities of risk and support jurisdictions to coordinate and provide reception, mass care, and radiological monitoring and decontamination activities for both evacuees and emergency workers were evaluated on the evening of October 3, 2000.

This report also contains exercise issues and recommendations for corrective action.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and adequately implemented them. No Deficiencies and 12 Areas Requiring Corrective Action (ARCA) were identified as a result of this exercise. There were 36 prior issues that were evaluated during this exercise, 29 were resolved. In addition, 23 Planning Issues were identified during the exercise.

II. INTRODUCTION

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

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of radiological RERPs developed by State and local governments;
- Determining whether such plans can be implemented on the basis of observation and evaluation of exercises of the plans 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 (*Federal Register*, Vol. 58, No. 176, September 14, 1993); and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Agriculture,
 - U.S. Department of Commerce,
 - U.S. Department of Energy,
 - U.S. Department of Health and Human Services,
 - U.S. Department of the Interior,
 - U.S. Department of Transportation,
 - U.S. Environmental Protection Agency,
 - U.S. Food and Drug Administration, and
 - U.S. Nuclear Regulatory Commission.

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

Formal submission of the RERPs to FEMA Region III by the Commonwealth of Pennsylvania and involved local jurisdictions for 44 CFR approval was followed closely by the critique and evaluation of these plans. Approval of these plans was granted on August 24, 1998.

A joint REP exercise was conducted on October 3 and November 2, 2000, by FEMA Region III to assess the capabilities of State and local offsite emergency preparedness organizations in implementing their RERPs and procedures to protect the public's health and safety in a radiological emergency involving the SSES. The purpose of this report is to present the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

The findings presented in this report are based on the assessments of the Federal evaluator team, with final determinations made by the FEMA Region III RAC Chairperson and approved by the Regional Director. This report is provided to the NRC, participating States, and FEMA Headquarters. State and local governments use the findings contained in this report for planning, training, and improvement of emergency response capabilities.

The criteria used in the FEMA evaluation process are contained in the following documents:

- 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-REP-14, *Radiological Emergency Preparedness Exercise Manual* (September 1991); and
- FEMA-REP-15, *Radiological Emergency Preparedness Exercise Evaluation Methodology* (September 1991).

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 EPZ, a listing of all participating jurisdictions and functional entities evaluated, and a tabular presentation of the times that key exercise events and activities occurred.

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains (1) descriptions of all Deficiencies and ARCAs assessed during this exercise,

recommended corrective actions, and the Commonwealth of Pennsylvania's response; and (2) descriptions of ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the October 3 and November 2, 2000, exercises to test the offsite emergency response capabilities in the area surrounding the SSES. This section of the exercise report includes a description of the EPZ, a listing of all participating jurisdictions and functional entities evaluated, and a tabular presentation of the times that key exercise events and activities occurred.

A. Plume Emergency Planning Zone Description

Susquehanna Steam Electric Station is located in northeastern Pennsylvania, Salem Township, 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 the utility. 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 1,108, located about 4 miles north of the plant. The nearest population center with more than 25,000 people is the City of Hazleton, with a population of 27,318 people, located 12 miles to the southeast.

The Berwick Airfield in Salem Township, Luzerne County, serves private aircraft and lies approximately 5 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 68,932, according to 1990 census data.

B. Exercise Participants

Agencies and organizations of the following jurisdictions participated in the SSES exercise on October 3 and November 2, 2000.

COMMONWEALTH OF PENNSYLVANIA

Bureau of Radiation Protection, Department of
Environmental Protection
Pennsylvania State Police
Pennsylvania Emergency Management Agency

RISK JURISDICTIONS

COLUMBIA COUNTY

Bloomsburg University
Columbia County Board of Commissioners
Columbia County Chief Clerk
Columbia County Department of Emergency Services
Columbia County Fire, Ambulance, HAZMAT, Rescue
Columbia County Sheriff's Department
Pennsylvania Army National Guard
Pennsylvania Department of Transportation
Pennsylvania State Agricultural Extension
Pennsylvania State Police

BRIAR CREEK BOROUGH

Briar Creek Borough Emergency Management Agency
Summerhill Fire Company

BRIAR CREEK TOWNSHIP

Summerhill Fire Company

MIFFLIN TOWNSHIP

Mifflin Township Board of Supervisors
Mifflin Township Emergency Management Agency
Mifflinville Fire Police
Mifflinville Rangers Company 1
Mifflinville-South Centre Police Department

LUZERNE COUNTY

AirCon Service HVAC Company
Buebs County Community College
Lackawanna Ambulance
Luzerne County Board of Commissioners
Luzerne County Conservation District
Luzerne County Emergency Management Agency
Luzerne County Prothonatary Office
Luzerne County Sheriff's Department
Northeast Pennsylvania Long-Term Care Association
Pennsylvania Army National Guard
109th Field Artillery
Pennsylvania Department of Corrections
Pennsylvania Department of Transportation
Pennsylvania State Police
U.S. Department of Agriculture
County Farm Service Agency
Veterans Administration Hospital

BLACK CREEK TOWNSHIP

Black Creek Township Emergency Management
Agency
Black Creek Township Fire Company
Nuremberg Ambulance Association

CONYNGHAM BOROUGH

Conyngham Borough Council
Conyngham Borough Emergency Management Agency
Conyngham Borough Fire Chief
Conyngham Borough Mayor's Office
Conyngham Borough Police Department
Conyngham Borough Public Works Services

HUNTINGTON TOWNSHIP/NEW COLUMBUS BOROUGH

Huntington Township Board of Supervisors
Huntington Township/New Columbus Borough
Emergency Management Agency
New Columbus Borough Council

NESCOPECK BOROUGH

Nescopeck Borough Council and Mayor's Office
Nescopeck Borough Emergency Management Agency
Nescopeck Borough Emergency Medical Services
Nescopeck Borough Fire Rescue Department
Nescopeck Borough Police Department
Nescopeck Borough Public Works Department
Nescopeck Borough Transportation Services

NEWPORT TOWNSHIP

Luzerne County Community College
Newport Police Department
Newport Township Board of Commissioners
Newport Township Emergency Management Agency
Newport Township Fire Department
Newport Township Fireman's Community Ambulance
Newport Township Police Department
Newport Township Board of Commissioners
Newport TWP Firemen Community Ambulance
(Emergency Medical Services)

SALEM TOWNSHIP

Salem Township Board
Salem Township Emergency Management Agency
Salem Township Police Department

SHICKSHINNY BOROUGH

Shickshinny Ambulance Service
Shickshinny Board of Commissioners
Shickshinny Borough Administration
Shickshinny Borough Emergency Management Agency
Shickshinny Borough Fire Department and Fire
Police
Shickshinny Borough Police
Shickshinny Mayor's Office

SUPPORT JURISDICTIONS

LACKAWANNA COUNTY

Blakely Borough Police/Emergency Management Agency
Blakely Police Department
Carbondale Fire Department
Dunmore Fire Department
Lackawanna County Emergency Management Agency
Lackawanna County Sheriff's Department
Throop Hose Company No. 3
Wilson Hose Company

LYCOMING COUNTY

Lycoming County Emergency Management Agency

MONTOUR COUNTY

Danville School District
Montour County Board of Commissioners
Montour County Clerk
Montour County Communications (911)
Montour County Emergency Management Agency

NORTHUMBERLAND COUNTY

Milton Borough Mayor's Office and Council
Milton Emergency Management Agency
Milton Fire Department
Milton Fire/Police
Milton Police Department
Northumberland County Corrections Department
Northumberland County Emergency Management Agency
Potts Grove Fire Company
Turbot Township Fire Department

SCHUYLKILL COUNTY

City of Pottsville Emergency Management Agency
Department of Conservation and Natural Resources -
Forestry
Department of Corrections/State Correctional
Institute
Farm Service Agency
Pennsylvania Department of Health
Pennsylvania State Police
Pottsville Human Services
Schuylkill County 911
Schuylkill County Commissioner's Office
Schuylkill County Interim Unit 29 (schools)
Schuylkill County Sheriff
Schuylkill County Transit Systems

UNION COUNTY

Union County Board of Commissioners
Union County Department of Agriculture
Union County Department of Emergency Services
Union County Planning Department
Union County Rescue Squad
William Cameron Engine Company

WYOMING COUNTY

Lake Winola Fire Company
Meshoppen Emergency Management Agency
Pennsylvania Emergency Management Agency
Triton Fire Department
Wyoming County Board of Commissioners
Wyoming County Communications Center
Wyoming County Emergency Management Agency

SCHOOLS

COLUMBIA COUNTY

Benton Area School District
Berwick Area School District
Bloomsburg Area School District
Central Columbia School District
 Central Columbia Elementary School
Columbia County Emergency Management Agency
Columbia-Montour Area Vocational-Technical School

LUZERNE COUNTY

Crestwood School District
 Rice Elementary School
Greater Nanticoke Area School District
 Greater Nanticoke Area High School
Luzerne County Emergency Management Agency
Northwest Area School District
 Northwest High School
West Side Vocational-Technical School
Wilkes-Barre Vocational-Technical 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.

AirCon Service Heating, Ventilation, and Air
 Conditioning
Amateur Radio Emergency Service (ARES)
American Red Cross
 Bloomsburg Chapter
 Northumberland, Upper Northumberland Chapter
 Sunbury Chapter
Berwington Transportation Company
Civil Air Patrol (CAP)
Columbia-Montour Amateur Radio Club
Davis Bus Company
Fishingcreek Transportation Company

Meadows Nursing Home
Milton Volunteer Fire and Rescue
Nuremberg-Weston Volunteer Fire Company
Pennsylvania Power and Light
Radio Amateur Civilian Emergency Services (RACES)
 Columbia County Chapter
 Northumberland County Chapter
 Newport Township Chapter
Rinehimer Bus Company
Spellman Ambulance Company
TEEM Environmental Services, Inc.
Tile, Tile, Tile-Zeeb & Associates
Transmed Ambulance
Wal-Mart
Wasilko Bus Lines
White Transit Bus Company

C. Exercise Timeline

Table 1, on the following pages, presents the times at which key events and activities occurred during the SSES exercise on November 2, 2000.

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: November 2, 2000, Susquehanna Steam Electric Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken										
		Pennsylvania State EOC	Emergency Operations Facility	Columbia County EOC	Briar Creek Borough EOC	Briar Creek Township EOC	Mifflin Township EOC	Luzerne County EOC	Black Creek Township EOC	Conyngham Borough EOC	Huntington Twp./New Columbus Borough EOC	Nescopeck Borough EOC
Unusual Event	1532	1540	1645	1545	N/A	1549	N/A	N/A	N/A	N/A	1540	N/A
Alert	1651	1705	1655	1657	1735	1713	1710	1659	1710	1709	1702	1742
Site Area Emergency	1853	1904	1853	1903	1920	1922	1908	1902	1903	1908	1818	1830
General Emergency	2015	2018	2015	2018	2015	2048	2027	2019	2025	2023	2022	2026
Simulated Radiation Release Started	2000	2023	2000	2018	2019	2019	2018	1818	1818	1830	1818	1818
Simulated Radiation Release Terminated	2051		2051									
Facility Declared Operational		N/A	1725	1740	1800	1740	1800	1700	1721	1713	1720	1743
Declaration of State of Disaster Emergency		1928		2001	2010	2003	2007	2026	2033			
Exercise Terminated		2140	2140	2140	2108	2145	2150	2145	2130	2058	2100	2100
Early Precautionary Actions: Livestock advisory – Shelter livestock, place on stored feed and covered water out to 10 miles.		1912	N/A	1958	1940	1936	1952	2002	2010	2007	2002	2012
1st A&N Decision (State [made]; local [received]) Emergency at SSES plant, stay tuned to EAS station.		1855 ^D	N/A	1855	1913	1909	1910	1855	1902	1900	1900	2031
1st Siren Activation:		1905		1905	1905	1905	1905	1905	1905	1905	1905	1905
1st EAS or EBS Message		1908		1908	1908	1908	1908	1908 ^A	1908	1908	1908	1908
2nd A&N Decision (State [made]; local [received]) Shelter: N/A Evacuate: Governor orders evacuation - 360° out to 10 miles.		2023 ^D		2023	2040	2034	2040	2028	2025	2030	2031	2058
2nd Siren Activation		2033		2033	2033	2033	2033	2033	2033	2033	2033	2033
2nd EAS or EBS Message		2036		2036	2036	2036	2036	2036 ^A	2036	2036	2036	2036
Precautionary Actions: Shelter livestock, place on stored feed and covered water out to 50 miles.		2038		2045				2111				
KI Administration Decision: Emergency Workers Advised <u>not</u> to Take												
KI Administration Decision: Emergency Workers Advised <u>to</u> Take		2029	2055	2054	2100	2059	2103	2029	2044	2041	2029	2044

LEGEND: S - Support Jurisdiction

D - Decision Making Jurisdiction

A - Activating Jurisdiction

N/A - Not Applicable

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: *November 2, 2000, Susquehanna Steam Electric Station*

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken											
		Newport Township EOC	Salem Township EOC	Shickshinny Borough EOC	Lackawanna County EOC	Lycoming County EOC	Montour County EOC	Northumberland County EOC	Schuylkill County EOC	Union County EOC	Wyoming County EOC		
Unusual Event	1532	1652	1630	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Alert	1651	1710	1708	1706	1750	1725	1720	1737	1710	1728	1722		
Site Area Emergency	1853	1908	1911	1909	1910	1915	1919	1916	1920	1914	1916		
General Emergency	2015	2026	2025	2026	2022	2027	2022	2028	2056	2022	2029		
Simulated Radiation Release Started	2000	1830	1831	1831	2030		2032	2015	2012	1919	1900		
Simulated Radiation Release Terminated	2051												
Facility Declared Operational:		1727	1718	1719	1745	1721	1912	1925	1920	1730	1750		
Declaration of State of Disaster Emergency:		2031	2032	-----	2024	2016	2014	2016	2022	2020	2018		
Exercise Terminated		2100	2109	2107	2015	2150	2144	2149	2112	2135	2124		
Early Precautionary Actions: Livestock advisory – Shelter livestock, place on stored feed and covered water out to 10 miles.		2000	2010	2010	1940	1952	1934	1946	1959	1933	1937		
1st A&N Decision (State [made]; local [received]) Emergency at SSES plant, stay tuned to EAS station.		1901	1903	1900	1902	1920	1902	1918	1920	1913	1930		
1st Siren Activation:		1905	1905	1905	1905	1905	1905	1905	1905	1905	1905		
1st EAS or EBS Message		1908	1908	1908	1908	1908	1908	1908	1908	1908	1908		
2nd A&N Decision (State [made]; local [received]) Shelter: N/A Evacuate: Governor orders evacuation - 360° out to 10 miles.		2031	2032	2032	2030	2057	2030	2028	2054	2033	2030		
2nd Siren Activation		2033	2033	2033	2033	2033	2033	2033	2033	2033	2033		
2nd EAS or EBS Message		2036	2036	2036	2036	2036	2036	2036	2036	2036	2036		
Precautionary Actions: Shelter livestock, place on stored feed and covered water out to 50 miles.					2040	-----	2045	2049	2056	2045	2058		
KI Administration Decision: Emergency Workers Advised <u>not</u> to Take													
KI Administration Decision: Emergency Workers Advised <u>to</u> Take		2042	2043	2043	2029	-----	2033	2032	2034	2034	2033		

LEGEND: S – Support Jurisdiction

D - Decision Making Jurisdiction

A - Activating Jurisdiction

N/A – Not Applicable

IV. EXERCISE EVALUATION AND RESULTS

This section contains the results of an evaluation of all jurisdictions and locations that participated in the October 3 and November 2, 2000, exercises to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the SSES.

Jurisdictions and functional entities were evaluated on the basis of their demonstration of criteria defined in the exercise objectives contained in FEMA-REP-14, *REP Exercise Manual*, dated September 1991. Detailed information on the exercise objectives and the extent-of-play agreement used in this exercise is found in Appendix 3.

A. Summary Results of Exercise Evaluation

The matrix presented in Table 2, on the following pages, presents the status of all exercise objectives from FEMA-REP-14 scheduled for demonstration during this exercise at all participating jurisdictions and functional entities. Exercise criterion are listed, and their demonstration status is indicated by the following letters:

- M - Met (No Deficiency or ARCAs assessed)
- D - Deficiency(ies) assessed
- A - ARCA(s) assessed (not affecting health and safety of the public)
- N - Not demonstrated as scheduled (reason explained in Section IV.B.)
- U - Unresolved ARCA(s) from prior exercise(s)
- 1 - State and/or county sole responsibility
- Blank - Not scheduled for demonstration

TABLE 2. SUMMARY RESULTS OF 2000 EXERCISE EVALUATION

DATE AND SITE: *October 3 and November 2, 2000, Susquehanna Steam Electric Station*

JURISDICTIONS/LOCATION	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	3.	3.	3.	3.	4.	4.	4.	4.	5.	5.	5.	5.	6.	6.	6.	6.	
	a.	b.	c.	d.	e.	a.	b.	b.	c.	d.	e.	a.	b.	c.	c.	d.	d.	e.	e.	f.	a.	a.	a.	b.	c.	a.	a.	a.	b.	a.	b.	c.
COMMONWEALTH OF PENNSYLVANIA																																
STATE EMERGENCY OPERATIONS CENTER			M																													
PUBLIC INFORMATION ACTIVITIES (CENIC/EOC)																																
MEDIA OPERATIONS CENTER																																
EMERGENCY OPERATIONS FACILITY (BRP '00)		M		M	M																											
STATE FIELD MONITORING TEAM 1 ('00)				M	A							M	A								M	M	M									
STATE FIELD MONITORING TEAM 2 ('00)				M	A							M	M								M	M	M									
STATE DEP/BRP LABORATORY																																
STATE SAMPLING TEAMS ('87)																																
STATE POLICE BARACKS ('00)				M	M							M	M																			
STATE TRAFFIC/ACCESS CONTROL POINTS (Risk Counties)				M	M							M	M																			
STATE AREA EOC (EASTERN-Hamburg '95)																																
STATE AREA EOC (CENTRAL-Selinsgrove '95)																																
RISK JURISDICTIONS																																
COLUMBIA COUNTY																																
COUNTY EMERGENCY OPERATIONS CENTER	U	M	M	M	M	M						M	U	M	M	M	M								A			A				
EMER. WORKER MON/DECON. STATION (Columbia Montour VoTech '97 & '00)					M																									M	M	
MONITORING/DECONTAMINATION CENTER (Millville Elem. School '97)																																
MONITORING/DECONTAMINATION CENTER (Millville High School)																																
MONITORING/DECONTAMINATION CENTER (Southern Columbia School)																																
BEAVER TOWNSHIP EOC																																
BERWICK BOROUGH EOC	U		U																													
BRIAR CREEK BOROUGH EOC ('00)	U	M	M	M	M	M						M	M	M															M			

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
D = Deficiency assessed

A = ARCA(s) assessed (Not affecting health and safety of public)
U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

TABLE 2. SUMMARY RESULTS OF 2000 EXERCISE EVALUATION

DATE AND SITE: *October 3 and November 2, 2000, Susquehanna Steam Electric Station*

JURISDICTIONS/LOCATION	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	3.	3.	3.	3.	4.	4.	4.	4.	4.	5.	5.	5.	5.	6.	6.	6.	6.	
	a	b	c	d	e	a	b	b	c	d	e	a	b	c	c	d	d	e	e	f	a	a	a	b	c	a	a	a	b	a	b	c	d
	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2	1	2	1	1	2	3	1	1	1	2	3	1	1	1	1	
COLUMBIA COUNTY (Cont'd)																																	
BRIAR CREEK TOWNSHIP EOC (Route Alert '00)	M	M	M	M	M	M						M	M	M		M	M											M					
FISHING CREEK TOWNSHIP EOC																	1																
MIFFLIN TOWNSHIP EOC ('00)	M	M	M	M	M	M						M	M	M		M	M											M					
NORTH CENTRE TOWNSHIP EOC																																	
SOUTH CENTRE TOWNSHIP EOC	U																																
LUZERNE COUNTY																																	
COUNTY EMERGENCY OPERATIONS CENTER	U	M	U	M	M	M						M	M	M		M	M								M			U					
EMER. WORKER MON./DECON. STATION (Wright Township Fire Hall '97 & '00)																														M	M		
EMER. WORKER MON./DECON. STATION (Freeland Fire Department)																																	
EMER. WORKER MON./DECON. STATION (Plains Twp. Fire Station #2)																																	
BLACK CREEK TOWNSHIP EOC ('00)	M	M	U	M	M	M						M	M	M		M	M											M					
BUTLER TOWNSHIP EOC												U																					
CONYNGHAM BOROUGH EOC ('00)	M	M	M	M	M	M						M	M	M		M	M											M					
CONYNGHAM TOWNSHIP EOC	U																																
DORRANCE TOWNSHIP EOC																																	
HOLLENBACK TOWNSHIP EOC																																	
HUNLOCK TOWNSHIP EOC												U																					
HUNTINGTON TWP./NEW COLUMBUS BORO. EOC ('00)	U	M	M	M	M	M						M	M	M		M	M											M					
NANTICOKE CITY EOC												U																					
NESCOPECK BOROUGH EOC ('00)	M	M	M	M	M	M						M	M	M		M	M											M					
NESCOPECK TOWNSHIP EOC	U																																
NEWPORT TOWNSHIP EOC (Route Alert '00)	M	M	M	M	M	M						M	M	M		M	M											M					
NUANGOLA BOROUGH EOC												U																					

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
 D = Deficiency assessed
 1 = State and/or county sole responsibility

A = ARCA(s) assessed (Not affecting health and safety of public)
 U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
 N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

TABLE 2. SUMMARY RESULTS OF 2000 EXERCISE EVALUATION

DATE AND SITE: *October 3 and November 2, 2000, Susquehanna Steam Electric Station*

JURISDICTIONS/LOCATION	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	3.	3.	3.	3.	4.	4.	4.	4.	4.	5.	5.	5.	5.	6.	6.	6.	6.					
	a.	b.	c.	d.	e.	a.	b.	b.	c.	d.	e.	a.	b.	c.	d.	d.	e.	e.	f.	a.	a.	a.	b.	c.	a.	a.	a.	b.	a.	b.	c.	d.					
LUZERNE COUNTY (Cont'd)	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2	1	2	1	1	2	3	1	1	1	2	3	1	1	1	1					
SALEM TOWNSHIP EOC ('00)	M	M	M	M	M	M						M	M	M		M	M										M										
SHICKSHINNY BOROUGH EOC ('00)	M	M	M	M	M	M						U	U	M		M	M									M											
SLOCUM TOWNSHIP EOC																																					
SUGARLOAF TOWNSHIP EOC	U											U																									
UNION TOWNSHIP EOC																																					
SUPPORT COUNTIES																																					
LACKAWANNA COUNTY																																					
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																														U		
RECEPTION CENTER (Big Lots Center '97 & '00)					M																														M		
MON./DECON. CENTER (Mid-Valley Elem. Center '95 & '00)					M																														A	M	
MON./DECON. CENTER (Mid-Valley Secondary Center '95)																																					
MON./DECON. CENTER (Penn. State-Worthington Campus)																																					
MON./DECON. CENTER (Dunmore YMCA)																																					
MON./DECON. CENTER (Dunmore High School '97)																																				U	
LYCOMING COUNTY																																					
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																															M	
RECEPTION CENTER (Lycoming Mall '97 & '00)					M																															M	
MON./DECON. CENTER (Montoursville High School '97)																																				U	
MON./DECON. CENTER (South Williamsport High School '97)																																				U	
MON./DECON. CENTER (McCall Middle School '95 & '00)					M																															M	M
MON./DECON. CENTER (Hughsville High School '95)																																					

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
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A = ARCA(s) assessed (Not affecting health and safety of public)
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Blank = Not scheduled for demonstration
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TABLE 2. SUMMARY RESULTS OF 2000 EXERCISE EVALUATION

DATE AND SITE: *October 3 and November 2, 2000, Susquehanna Steam Electric Station*

JURISDICTIONS/LOCATION	1. a.	1. b.	1. c.	1. d.	1. e.	2. a.	2. b.	2. b.	2. c.	2. d.	2. e.	3. a.	3. b.	3. c.	3. c.	3. d.	3. d.	3. e.	3. e.	3. f.	4. a.	4. a.	4. a.	4. b.	4. c.	5. a.	5. a.	5. a.	5. b.	6. a.	6. b.	6. c.	6. d.		
	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2	1	2	1	1	2	3	1	1	1	2	3	1	1	1	1			
MONTOUR COUNTY																																			
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																												A		
MASS CARE/HOST SCHOOL (Fred W. Diehl Sr. High School '00)					M																													M	
NORTHUMBERLAND COUNTY																																			
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																												M		
RECEPTION/MON./DECON. CENTER (Milton Area High School '97 & '00)					A																												M	M	
SCHUYLKILL COUNTY																																			
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																												M		
RECEPTION/MON./DECON. CENTER (Marian High School '95/ '97 & '00)					A																												A	M	
MON./DECON. CENTER (Tamaqua High School '95 & '97)																																		U	
MON./DECON. CENTER (Tamaqua Elementary School)																																			
MON./DECON. CENTER (Tamaqua Junior High School)																																			
UNION COUNTY																																			
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																												M		
RECEPTION CENTER (Montandon Elementary School '97 & '00)					M																													M	
MON./DECON. CENTER (Lewisburg Area High School '95 & '97)																																		U	U
MON./DECON. CENTER (Mifflinburg Area High School '95 & '97)																																		U	
MON./DECON. CENTER (Lewisburg Area Middle School '00)					M																												M	M	
MON./DECON. CENTER (Mifflinburg Area Middle School)																																			
WYOMING COUNTY																																			
COUNTY EMERGENCY OPERATIONS CENTER	M	M	M	M	M																												M		
RECEPTION/MON./DECON. CENTER (Tunkahannock High School '97 & '00)					M																												U	M	

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
D = Deficiency assessed

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Blank = Not scheduled for demonstration
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TABLE 2. SUMMARY RESULTS OF 2000 EXERCISE EVALUATION

DATE AND SITE: *October 3 and November 2, 2000, Susquehanna Steam Electric Station*

JURISDICTIONS/LOCATION	1.	1.	1.	1.	1.	2.	2.	2.	2.	2.	2.	3.	3.	3.	3.	3.	3.	3.	3.	3.	4.	4.	4.	4.	4.	5.	5.	5.	5.	6.	6.	6.	6.
	a.	b.	c.	d.	e.	a.	b.	b.	c.	d.	e.	a.	b.	c.	c.	d.	d.	e.	e.	f.	a.	a.	a.	b.	c.	a.	a.	a.	b.	a.	b.	c.	d.
CENTRAL COLUMBIA AREA SD (Central Columbia Elementary '00)	1	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2	1	2	1	1	2	3	1	1	1	2	3	1	1	1	1	
CENTRAL COLUMBIA AREA SD (Central Columbia Middle School))																																	
CENTRAL COLUMBIA AREA SD (Central Columbia High School)																																	
LUZERNE COUNTY																																	
CRESTWOOD SCHOOL DISTRICT (Rice Elementary '00)																																	
CRESTWOOD SCHOOL DISTRICT (Fairview Elementary)																																	
CRESTWOOD SCHOOL DISTRICT (St. Judes Elementary)																																	
CRESTWOOD SCHOOL DISTRICT Crestwood High School)																																	
GREATER NANTICOKE AREA SD (K.M. Smith Elementary)																																	
GREATER NANTICOKE AREA SD (Pope John Paul II School)																																	
GREATER NANTICOKE AREA SD (Kennedy Elementary)																																	
GREATER NANTICOKE AREA SD (Lincoln Elementary)																																	
GREATER NANTICOKE AREA SD (John S. Fine Sr. High '00)																																	
GREATER NANTICOKE AREA SD (Greater Nanticoke Area Middle)																																	
GREATER NANTICOKE AREA SD (Luzerne Co. Community College)																																	
HAZLETON AREA SCHOOL DISTRICT (Drums Elementary)																																	
HAZLETON AREA SCHOOL DISTRICT (Valley Elementary '00)																																	
NORTHWEST AREA SCHOOL DISTRICT (Northwest Jr./Sr. High '00)																																	
NORTHWEST AREA SCHOOL DISTRICT (Huntington Mills Elementary)																																	
NORTHWEST AREA SCHOOL DISTRICT (Hunlock Elementary)																																	
NORTHWEST AREA SCHOOL DISTRICT (Garrison Elementary)																																	
NORTHWEST AREA SCHOOL DISTRICT (Muhlenburg Christian Academy)																																	
WEST SIDE VOCATIONAL-TECHNICAL SCHOOL ('00)																																	
WILKES-BARRE VOCATIONAL-TECHNICAL SCHOOL ('00)																																	

LEGEND: M = Met (No Deficiency or ARCA(s) assessed)
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U = Unresolved ARCA(s) from prior exercises

Blank = Not scheduled for demonstration
N = Not demonstrated as scheduled (Reason explained in Section IV.B.)

B. Status of Jurisdictions Evaluated

The information contained in this subsection provides details regarding the evaluation of each participating jurisdiction and functional entity in a jurisdiction-based, issues-only format. Presented below are definitions of the terms used in this subsection relative to objective demonstration status:

- **Met** - Listing of the demonstrated exercise objectives 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 objectives under which a Deficiency was assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.
- **Area Requiring Corrective Actions** - Listing of the demonstrated exercise objectives under which one or more ARCAs were assessed during the current exercise or under which ARCAs assessed during prior exercises remain unresolved. Included are a description of the ARCA(s) assessed during this exercise and the recommended corrective action(s) to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** - Listing of the exercise objectives not demonstrated as scheduled during this exercise and the reasons they were not demonstrated.
- **Prior Issues - Resolved** - Descriptions of ARCAs assessed as resolved in this exercise and the corrective actions demonstrated.
- **Prior Issues - Unresolved** - Descriptions of ARCAs assessed during prior exercises that were not resolved in this exercise. Included are the reason the ARCA remains 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 discussed in this report:

- A **Deficiency** is defined in 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 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 numbers for Deficiencies and ARCAs include the following elements, each 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.
- **Criterion Number** - A three-character alphanumeric code separated by decimal points that corresponds to planning standards in NUREG-0654.
- **Issue Classification Identifier** - (D = Deficiency, A = ARCA) Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Identification Number** - A two- or three-digit indexing number assigned to each issue identified in the exercise.

1. COMMONWEALTH OF PENNSYLVANIA

1.1 EMERGENCY OPERATIONS CENTER

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

Issue No.: 63-97-03-A-01

Description: Some exercise objectives were not adequately demonstrated at the county level (e.g., Evacuation and Relocation) because the State EOC made the announcement that the exercise was terminated without prior notice. (NUREG-0654, N.1.a.)

Corrective Action Demonstrated: The State EOC contacted each risk and support county to determine whether or not each jurisdiction had an opportunity to fully demonstrate their extent of play objectives.

- f. **PRIOR ISSUES - UNRESOLVED:** None

1.2 EMERGENCY OPERATIONS FACILITY

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

1.3 STATE FIELD MONITORING TEAM 1

- a. **MET:** Criteria 1.d.1, 3.a.1, 4.a.1, 4.a.2, and 4.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Criteria 1.e.1 and 3.b.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 locations posted on the maps.

Possible Cause: The map used by Teams 1 and 2 was not the same as that used by the FTC. In addition, preselected locations were not related to identifying landmarks.

Reference: NUREG-0654, I.8. and J.10.a.

Effect: The teams had difficulty in finding monitoring locations that interfered with their ability to perform their duties in a timely manner.

Recommendation: All maps used by the FTC and the field teams should be the same. The maps should include road names and landmarks for the pre-selected monitoring locations.

Schedule of Corrective Actions: SSES maps were undergoing improvement prior to the exercise and were not available for the exercise. The improved completed maps should be ready for use by 6/1/01.

BRP does not agree that this is an issue (ARCA) since there is NO effect or potential effect on public health and safety. The field team survey results are not used to determine whether an evacuation is performed. The field teams continued to a position they believed was near the selected monitoring point and then successfully completed the survey requirements. The results still provided necessary information in a timely manner.

In addition, at the recommendation of the FEMA Technical Reviewer, BRP is investigating the use of Fixed Monitoring points.

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. First, the field monitoring teams were unfamiliar with the road network within the SSES EPZ, which may in an actual event inhibit the teams' effective relocation outside the EPZ, if necessary. Second, because the Field Team Coordinator and field teams did not have the same maps for planning and

execution of their assignment, the map inconsistencies may compromise the effective utilization of field teams during an actual event. Third, because of the discrepancies among the maps, coordinates of the plume may be incorrectly reported or converted to the Field Team Coordinator's map. Finally, the information from field monitoring teams provides for verification of dose projections, it is important for the teams to be able to find their assigned locations and provide back to dose assessment personnel radiation measurements and, if requested, results from air samples taken.

Issue No.: 63-00-3.b.1-A-02

Condition: The ingestion of KI by Team 1 personnel was not documented.

Possible Cause: There was no place to record the issuance and use of KI on the BRP Field Team Data Log (DEP/BRP/IP-102, Attachment 2, Revision 8, August 1998). Team 1 did not have the Dosimetry/KI Report Form (PEMA-BOP-REP-3, Revised April 1997) from the State Plan (Annex E, Tab 1, Attachment B, Appendix 5).

Reference: NUREG-0654, J.10.e. and J.10.f.

Effect: No record was available to show that Team 1 personnel had ingested KI and when it was ingested.

Recommendation: The BRP Field Team Data Log should be revised to include a place to record the ingestion of KI, or the use of the Dosimetry-KI Report Form should be addressed in the BRP procedure.

Schedule of Corrective Actions: Field Teams will be instructed to document the ingestion of KI using BRP -IP102, Attachment 1.

BRP does not agree that this is an issue (ARCA) since there is NO effect or potential effect on public health and safety. BRP determined and recommended KI be administered. Approval was received from the PA Department of Health and the message was transmitted to the Field Teams.

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. During the simulated event, if the potential exists for the field team members to become incapacitate for any

reason, BRP management would have no documentation to substantiate whether or not the field team members had taken KI. This failure to record ingestion of KI affects the health and welfare of the field team members

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

1.4 STATE FIELD MONITORING TEAM NO. 2

- a. **MET:** Criteria 1.d.1, 3.a.1, 3.b.1, 4.a.1, 4.a.2, and 4.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Criterion 1.e.1
Issue No.: 63-00-1.e.1-A-01 (See Condition, Possible Cause, Reference, Effect, and Recommendation under Section 1.3)
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** None
- f. **PRIOR ISSUES - UNRESOLVED:** None

1.5 STATE TRAFFIC/ACCESS CONTROL (State Police/Risk Counties)

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

2. RISK JURISDICTIONS

2.1 COLUMBIA COUNTY

2.1.1 EMERGENCY OPERATIONS CENTER

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

Issue No.: 63-00-5.a.1-A-03

Condition: Columbia County EOC staff did not follow its plan and the extent-of-play agreement:

- Some messages classified as Emergency Alert System (EAS) messages were broadcast without first sounding the sirens (Page E.4.2). Some statements sent to EAS stations by the County were erroneously classified as EAS messages - they were actually special news bulletins and ordinary news releases.
- The use of plan-specified prescribed messages, such as the evacuation notice (General Evacuation EAS Announcement, Attachment D, Page E-4-7) used to alert the public following siren activation, was not documented in the Public Information Officer's (PIO) activity log.
- The special news broadcast (RELEASE CCN-6) was unclear whether the Governor recommended or ordered the evacuation of the 10-mile EPZ.
- Some EAS activations were initiated by telephone; EAS station personnel select messages and make content changes at the direction of the PIO. The instructions and responses were not documented by the PIO.
- The Initial EAS Notification Announcement (RELEASE CCN-1) identified the local government organization but did not identify the official who has the authority to provide the alert signal and instructional message (as required in Criterion 5.a.1).

Possible Cause: The plan does not reflect FEMA EAS guidance concerning EAS messages, special news broadcasts, and ordinary news releases. Informal arrangements with EAS stations have not been documented in writing. The County plan is not consistent with some emergency management practices implemented by the Emergency Management Agency (EMA) and EOC personnel.

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

Effect: The unclear information contained in the special news broadcast could cause confusion and delay notification of the public. The lack of written procedures could also cause confusion and result in the omission of important information or the broadcast of erroneous information.

Recommendation: The County plan should be revised to reflect current FEMA EAS guidance. Undocumented Alert and Notification (A&N) procedures should be formalized in writing and added to the County plan to ensure that the public is informed in a timely manner. County PIO and other appropriate emergency operations staff should receive training regarding existing and new procedures, especially message content and documentation of telephone communications with EAS stations and the distinction between EAS messages and special news broadcasts.

Schedule of Corrective Actions: The County plan is consistent with the state plan and all guidance distributed by PEMA. The messages contained in the County Plan have been provided by PEMA and are those contained in the state Plan in Appendix 16, Attachments A-H. As written in Paragraph E-16-5 of the State Plan, Columbia County used those EAS announcements and subsequent revisions. Also, during the exercise, identical messages were issued by PEMA. An "EAS" message is one that is, or would be, broadcast over the EAS network.

It is not clear how the fact some messages labeled "EAS" but were perhaps not EAS messages, could adversely affect the population. They contained information regarding the emergency. Also, the lack of an "official's" name within the message does not adversely affect the content or "cause confusion" merely because a name was not included.

Also, the undocumented procedures did not result in an untimely or ineffective outcome. The messages were transmitted (corrected) and received properly by the station. PEMA does not agree that this is an issue (ARCA) since there is NO effect or potential effect on public health and safety.

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. The County plan still needs to be revised to reflect current

FEMA EAS guidance and the EOC staff need to follow the guidance in order to ensure the proper notification of important information is received by the public.

Issue No.: 63-00-5.b.1-A-04

Condition: A rumor control telephone number was not included in the body of EAS messages, news releases, or special news broadcasts. In addition, information for the transient population was not included in any messages nor was transients instructed to refer to and review emergency information in the telephone books.

Possible Cause: The County plan does not adequately reflect FEMA EAS guidance, which requires that a telephone number and information for transients be included in instructional messages and news releases.

Reference: NUREG-0654, E.7. and G.4.c.

Effect: The omission of this information could cause public confusion and limit the ability of county officials to adequately provide for public health and safety.

Recommendation: The County plan should be updated to reflect FEMA EAS guidance, including the provision of a telephone number for public inquiries and information for transients in special news broadcasts, news releases, and media briefings. The County PIO and other appropriate emergency operations staff should receive training regarding existing and new procedures.

Schedule of Corrective Actions: Rumor control number is not contained in the messages for reasons stated below.

Also, in Columbia County message CCN 1-4, the listeners are referred to the pages of the local directory. The paragraph begins with "People living, working or traveling within this approximate 10 mile radius..." and instructions to stay tuned to this station are contained in the final paragraph. References to NUREG 0654 E.7, are included in CCN 6, G.4.c. is included by referring people to the blue pages of the telephone directory.

Also, NUREG 0654, G.2., refers to directing transients via signs or "other measures" to the

telephone directory or other source of local emergency information which are contained in the EAS messages. They are instructed to stay tuned and referred to the blue pages of the telephone directory.

The rumor control telephone number is in the blue pages of the telephone directory.

FEMA does not agree that this is an issue (ARCA) since there is NO effect or potential effect on public health and safety.

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. Transients were never referred to the telephone book for information and the rumor control telephone number was not provided to the public. This lack of proper action could definitely cause the public to become confused.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criteria 1.d.1 and 5.a.1

Issue No.: 63-97-10-A-03

Description: Route alerting teams advise local residents to tune their radios to their local EAS stations for further information. Call letters and frequency were not provided in the exercise demonstration. Residents who are unfamiliar with these stations will depend on information provided in their telephone books or received from the county rumor control operators. (NUREG-0654, E.4.a., E.4.b., E.5., E.6., and E.7.)

Corrective Action Demonstrated: Municipal plans now require EAS station call letters and frequencies to be included in route alerting notifications. The Emergency Management Coordinator (EMC) provided a faxed copy of the form that she said was used by Fishing Creek Township; however, Fishing Creek Township did not participate in this exercise.

The route alerting teams at Briar Creek were provided with route packets that included an announcement that was consistent with the Briar Creek Township plan, but did not have the EAS station call letters and frequencies entered in the designated spaces. The route alerting teams were properly briefed, but were not dispatched on the day of the exercise; a route involving at least one

hearing-impaired person was not demonstrated as required by the extent-of-play agreement. The Briar Creek Township route alerting team re-demonstrated the criterion two days later, on November 4. The route notification statement included accurate EAS station call letters and frequencies entered in the spaces provided for this information.

Issue No.: SQX93-04R

Description: The county did not notify the risk municipalities of the Site Area Emergency (SAE), the siren activation, and the EBS broadcast until 6 minutes after the county simulated the activation. (Objective 4; NUREG-0654, F.1.)

Corrective Action Demonstrated: The County notified risk municipalities of the SAE, the siren activation, and the EAS broadcast in a timely manner after the EOC was provided with this information by the Licensee and State authorities.

f. PRIOR ISSUES - UNRESOLVED: Criteria 1.a.1 and 5.b.1

Issue No.: 63-97-10-A-02

Description: Procedures are not sufficient to ensure that the initial Emergency Alert System (EAS) message is selected and broadcast within 15 minutes of the decision time. EAS messages are not uniformly faxed to radio stations with a specified broadcast time. The lack of a specified broadcast time increases the potential for either late EAS releases that exceed the 15 minutes or premature releases that precede the siren sounding. The text in the second EAS message contained a circle around the word "recommended" rather than "ordered" for the evacuation notification. This message was faxed to risk municipalities and the primary and secondary EAS stations. The text was corrected at the EAS station, but the risk municipalities were uncertain if the evacuation was recommended or ordered. (NUREG-0654, E.5., E.6., and E.7.)

Reason ARCA Unresolved: The protective action status ("recommended" or "ordered") in Message CCN-6 was again indicated inconsistently; on pages 2 and 3 of the message, the status is not clearly marked (the terms "recommendation" and "order" are both used and neither one has been marked out).

Recommendation: The PIO staff should receive training concerning the preparation of EAS messages and news releases to ensure that the message content is customized (selecting or eliminating options) and the appropriate information is filled in.

Schedule of Corrective Actions: Additional training will be conducted and this area will be demonstrated at the next biennial exercise.

Issue No.: 63-97-30-A-04

Description: The following municipality or township 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.)

Reason ARCA Unresolved: The Briar Creek Borough EOC failed to demonstrate 24-hour staffing capability; three key positions during the first shift were not filled. Five of the nine key positions for second-shift operations also remain unfilled. Also, both Berwick Borough and South Centre Township were not scheduled for evaluation at the 2000 exercise.

Recommendation: The capability for 24-hour staffing should be demonstrated at the Borough EOC by filling all key EOC position during both shifts. Also, both Berwick Borough and South Centre Township should be evaluated at the next exercise.

Schedule of Corrective Actions: The draft report states that Briar Creek Borough EOC failed to demonstrate 24-hour staffing capability. Briar Creek Borough Coordinator stated that he tried to explain to the FEMA observer that Briar Creek Borough does not have a Police Services Officer because the state police man the only traffic control point in the borough. Also, the borough does not have a Fire Rescue Officer because Berwick Borough performs route alerting and the borough does not have Public Works or Public Information Officers because the mayor performs those functions.

This is consistent with the roster in the Notification and Resource Manual, Section III of the Briar Creek Borough Plan. Descriptions of these responsibilities are stated in the Standard Operating Procedures but how they fill these responsibilities are properly listed in the Notification and Resource Manual.

A poster was displayed with individuals for all positions as identified in the Notification and Resource Manual. Briar Creek Borough should be removed from this previous issue.

This response also applies to the duplicate issue number 63-97-01-A-06

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. A review of the Briar Creek Borough reveals the following: (1) Attachment D-3, Nuclear Power Plant Incident Response Actions - Police services Officer, Brier Creek Borough EOP, dated Spring 2000, outlines numerous activities besides staffing the TCP; (2) Attachment E-3, Nuclear Power Plant Incident Response Actions - Fire and Rescue Services Officer, Brier Creek Borough EOP, dated Spring 2000, outlines numerous activities besides route alerting responsibilities; and (3) page E-15 of the Berwick Borough EOP, dated Spring 2000, shows that the Eagle Fire Company alerts the public up to the western boundary of Briar Creek Borough, however, neither the EMC or other staff members are required by the plans to ensure the activity has been performed, nor are there any agreements in either community's plan to accomplish the requirement.

**2.1.2 EMERGENCY WORKER MONITORING/DECONTAMINATION STATION
(Columbia-Montour Area Vocational-Technical School)**

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

2.1.3 BRIAR CREEK BOROUGH

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, and 5.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criteria 1.a.1 and 1.c.1

Issue No.: 63-97-03-A-07

Description: Complete message logs were not retained or maintained. (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Corrective Action Demonstrated: The Communications Services Officer maintained a message log for all incoming and outgoing messages throughout the exercise. The log was comprehensive and clear.

- f. **PRIOR ISSUES - UNRESOLVED:** Criterion 1.a.1

Issue No.: 63-97-01-A-06

Description: Insufficient personnel were available to staff the EOC. (NUREG-0654, A.4.)

Reason ARCA Unresolved: During the exercise, three key positions (Police Services Officer, Public Works and Resource Services Officer, and Public Information Officer), out of a total of nine positions, remained unfilled.

Recommendation: All key positions should be filled with appropriate personnel during the first shift.

Schedule of Corrective Actions: See duplicate issue number 63-97-30-A-04

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. The issue was not for a shift change, but for insufficient staffing of the EOC during the first shift. The recommendation concerning the need for all key personnel being available for both shifts has been appropriately restated.

2.1.4 BRIAR CREEK TOWNSHIP

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

2.1.5 MIFFLIN TOWNSHIP

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, and 5.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criteria 1.a.1 and 1.c.1

Issue No.: 63-97-01-A-08

Description: The EOC was not fully staffed. The position of Medical/Transportation Chief was not filled. Additionally, the shift roster required by Mifflin's plan, SOP-A, Section A.3.3.a, page A-4, was not established and properly posted in accordance with the plan. (NUREG-0654, A.4. and E.2.)

Corrective Action Demonstrated: All positions in the EOC were filled, including the Medical/Transportation Chief, in accordance with the Mifflin Township plan.

Issue No.: 63-97-02-A-09

Description: Although a status board was available in the EOC, information was not posted during the exercise. (NUREG-0654, H.3.)

Corrective Action Demonstrated: The Status board was kept updated throughout the exercise.

- f. **PRIOR ISSUES - UNRESOLVED:** None

2.2 LUZERNE COUNTY

2.2.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Criteria 1.b.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, and 5.a.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criteria 1.c.1 and 3.a.1

Issue No.: 63-97-03-A-10

Description: The municipalities were confused by the County EOC's internal and external message processing procedures in such areas as the status of the emergency situation, protective action recommendations (PARs), and identification of messages. Internal processes call for generation of the message at the operations position. The message is printed, reviewed, and approved for release, and then is copied and provided simultaneously to the radio (includes a Packet fax) operators in the communications room for dispatch. The information should be consistent. However, in reviewing the hard copies provided by each position, it was noted in several cases that messages dispatched by radio had the same identification number and different or incomplete information. The same thing occurred with several of the messages transmitted for hard copy at the municipalities by Packet fax. For example:

- a. Message 1 did not include wind directions, whereas Packet 1 included the wind direction.
- b. Two packets, labeled No. 1, were dispatched at different times (both indicated the same dispatch time, and neither copy indicated "corrected"). The SAE declaration times differed (1831 and 1702), information in response actions differed, and plant status information was missing in one message.
- c. Two messages, labeled No. 4, were dispatched. Both messages stated the same dispatch time and neither indicated that it was corrected. On one message, the wind direction was missing, and the other contained Bureau of Radiation Protection (BRP) information.

- d. Two packets, labeled No. 4, were dispatched and one was incomplete. Wind direction was missing in one packet, and the other was missing information about stored feed and contained BRP information.
- e. Two messages were dispatched. Both had the same time, but different information in block E. On the protective action, one message did not contain BRP information, and the other contained information on action for farmers that were not contained in the other message. (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Corrective Action Demonstrated: The Luzerne County EOC now uses a computerized system for internal message communication that is linked with all workstations and functional areas. The Radio Communicator read external communications written by the operations staff to all municipalities. The packet message system is no longer used.

Issue No.: 63-97-05-A-12

Description: Radiological and agricultural staff was unfamiliar with several plan requirements regarding dosimetry distribution and radiological exposure control. For example, the Luzerne County Emergency Management Agency (EMA) is responsible for distributing dosimetry to municipalities and townships (Annex E, Appendix 13, Section page E-13-1). The RO was unfamiliar with Category A, B, and C dosimetry requirements (Annex E, Appendix 13, page E-13-20). He also was unaware that direct-reading dosimeters (DRD) should be read at 30-minute intervals (Annex E, Appendix 13, Section 4.A.4, page E-13-24). In addition, the RO was unfamiliar with authorized mission exposure limits for routine, public safety, and life-saving activities. The RO also stated that 0-200 Roentgen (R) DRDs had been distributed to all emergency workers who performed work within the 10-mile EPZ. However, according to the plan (Annex E, Appendix 13, Section 2.A.2, page E-13-20), 0-200 R DRDs are to be issued only to those emergency workers who engage in life-saving missions in high radiation areas.

The Agricultural Officer, who coordinates farm-related emergency responses, stated that farmers are not emergency workers and are not required to be issued dosimetry to attend to livestock needs during a radiological event. However, the plan (Annex E, Appendix 13, Section 2.A.2, page E-13-21)

states that a Category A dosimetry kit, which consists of one thermoluminescent dosimeter (TLD), one 0-20 R DRD, and one unit of KI, will be issued to farmers who need to return to the area to care for their livestock. (NUREG-0654, K.3.a., K.3.b., K.4., and J.10.e.)

Corrective Action Demonstrated: The Radiological Officer (RO) and the Agricultural Officer (AO) were familiar with the plans and procedures relating to dosimetry use and distribution and emergency worker exposure control. The RO produced a copy of the Luzerne County KI/Survey Meter Needs sheet (page E-13-52), which lists the needs of all of the municipalities in Luzerne County. The RO was knowledgeable about all aspects of the dosimetry requirements, including Category A, B, and C dosimetry kits; self-reading and permanent record dosimeters; mission radiation exposure limits (5 Roentgen [R]); life-saving activities (10 R); and all aspects of potassium iodide (KI) use and precautions.

The RO and the AO were both aware that each emergency worker that entered the 10-mile EPZ would be issued a Category A dosimetry kit, which included one self-reading dosimeter, one permanent record dosimeter, a 14-day supply of KI, and a Dosimetry/KI Report Form. The RO explained to the emergency workers that the Dosimetry/KI Report Form was to be used to record the exposure of the self-reading dosimeters at 30-minute intervals and to document the ingestion of KI should a KI decision be reached.

Issue No.: 63-97-13-A-13

Description: Rumor Control Center operational procedures have not been established to support the tasking contained in Annex E, Appendix 4, paragraph 4.H. of the County Emergency Operations Plan (EOP). Additionally, a trend analysis of rumors was not performed. A review of the staff's note sheets used to record calls did not, in most cases, reveal information, such as the name of the caller, call-back phone number, and a description of the response. (NUREG-0654, G.4.c.)

Corrective Action Demonstrated: The Rumor Control staff efficiently handled and documented incoming calls. The staff and the PIO periodically checked for trends within the County and between Luzerne County and Columbia County.

Issue No.: 63-97-15-A-14

Description: The medical staff failed to ensure that accurate lists containing the names and addresses of homebound and mobility-impaired persons with special medical needs and transportation requirements, persons with hearing impairment, and non-English-speaking persons for each EPZ township and municipality were on file in the County EOC. This requirement (Luzerne County EOP, Annex E, paragraph M.2, page E-16) is implied by Section 7504(a) of the Pennsylvania Emergency Management Services Code (35 Pennsylvania Code of Standards). The code states, "...if a municipality is unable to respond to a nuclear power incident, the county becomes immediately responsible for the coordination and support of response activities within the affected municipality." In addition, the requirement to have these lists at the county level was in the extent-of-play agreement for this exercise. (NUREG-0654, J.10.c. and J.10.d.)

Corrective Action Demonstrated: The health/medical staff at the Luzerne County EOC had accurate lists of the names, addresses, and special transportation requirements of homebound, mobility-impaired, hearing-impaired, and non-English-speaking persons for each township and municipality in the 10-mile EPZ.

f. PRIOR ISSUES - UNRESOLVED: Criteria 1.a.1 and 1.c.1

Issue No.: 63-97-30-A-15

Description: The following municipality or township 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. Black Creek Township
- b. Conyngham Borough
- c. Conyngham Township
- d. Huntington Township/New Columbus Borough
- e. Nescopeck Township
- f. Sugarloaf Township (NUREG-0654, A.4. and N.1.a)

Reason ARCA Unresolved: Huntington Township/New Columbus Borough did not demonstrate a shift change, brief incoming staff members, or provide a complete staffing roster during this exercise, as required by the extent-of-play agreement. Conyngham Township,

Nescopeck Township, and Sugarloaf Townships were not scheduled for evaluation at the 2000 exercise.

Recommendation: Staff in the Hunington Township/New Columbus Borough EOC should demonstrate a shift change or provide a roster during the next exercise and the Townships of Conygham, Nescopeck, and Sugarloaf should be evaluated at the next exercise.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

Issue No.: 63-97-03-A-11

Description: The Operations Staff failed to ensure that the EOC staff adhered to operational requirements, as required by the Luzerne County EOP, Annex E. For example:

- a. The medical staff did not ensure that hospitals, nursing homes, and municipalities reported the status and completion of their evacuations. (page E-7-5, paragraph 5.D.4.)
- b. The medical staff did not maintain records of evacuees relocated to health and medical facilities. (page E-7-5, paragraph 5.D.5.)
- c. The County Sheriff did not request municipal police chiefs to render periodic situation reports. (page E-11-3, paragraph 5.D.9.)
- d. The mass care staff did not confirm that PEMA Area Headquarters had alerted the support counties. (page E-12-2, paragraph 5.B.3.) (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Reason ARCA Unresolved: The County EOC medical staff was not able to compile records of evacuees relocated to health and medical facilities because no personnel, who have access to patient records, participate in drills conducted outside normal work hours.

Recommendation: Person(s) who are authorized to access patient records should be available to participate in drills regardless of the time of day. Forms to record the evacuee information have been developed and approved by the Northeastern Pennsylvania Long-Term Care Association, which serves Luzerne and Lackawanna counties. The mass

care center staff should be provided with an opportunity to exercise and test these forms and procedures.

Schedule of Corrective Actions: There is no requirement. We should not be involving the "public" in exercises. The County should be assisting the facilities with plans and even notifying the facility that there is an exercise. However, exercise participation by the public is not expected.

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. First, the requirement for this activity is stated on page E-7-3, paragraph 5.D.5) of the Luzerne County RERP. The same requirement is also found in the Columbia County RERP on page E-7-3, paragraph 5.D.5.

**2.2.2 EMERGENCY WORKER MONITORING/DECONTAMINATION STATION
(Wright Township Fire Hall)**

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

2.2.3 BLACK CREEK TOWNSHIP

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

Issue No.: 63-97-03-A-16

Description: The EMC did not ensure that his staff maintained a master message log of outgoing and incoming communications for the EOC. (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Reason ARCA Unresolved: The Communications Officer did not record incoming and outgoing radio messages in a master log.

Recommendation: Emergency staff should be trained in maintaining complete logs for incoming and outgoing messages and maintaining a master message log.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

2.2.4 CONYNGHAM BOROUGH

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, and 5.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criteria 1.c.1, 3.a.1, and 3.c.1

Issue No.: 63-97-03-A-18

Description: The EMC did not review who is responsible for each function and ensure that the person understood that function. The staff did not use checklists and logs to account for their activities. Nor were municipal plans reviewed periodically by the staff. Additionally, EOC staff briefings were not held so staff could keep abreast of the latest emergency requirements and the status of SSES. Consequently, the staff did not have the opportunity to brief each other on what their current activities, unmet needs, and coordination requirements were. (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Corrective Action Demonstrated: All staff conversed with one another during the exercise so that each

knew what the others were doing with respect to their emergency duties. In addition, the EMC talked with each person, as the situation warranted, to make sure they knew and were performing their duties.

Issue No.: 63-97-05-A-19

Description: The EOC management personnel responsible for briefing and managing emergency worker exposure control and KI distribution were not familiar with necessary procedures. The fire chief was briefed by the Shift 2 RO, so that he (fire chief) could brief the route alerting teams. The fire chief said he would take the dosimeter and KI to the route alerting teams at the fire station. The briefings given to the route alerting teams by the fire chief were not adequate. The route alerting teams were told they should bring their dosimeter to the EOC upon completing their assignment. The plan says they should go to the Wright Township Hose Company for monitoring and decontamination, if necessary, and to turn in equipment. [Conyngham Borough EOP, Attachment I-4, Section I.4.2(6) e., page I-18].

Route alerting and traffic control point (TCP) staff were told to read their DRDs at the beginning and end of their shifts. DRDs should be read every 30 minutes (Conyngham Borough EOP, Attachment I-4, Section I.4.2.c., page I-14). Workers were told they should call the EOC if they get a reading of 5 R. There was no discussion about the other limits. The fire chief was not familiar with the card and, therefore, not familiar with many of the instructions for dosimeters.

The KI instructions were available but were not given to the emergency workers. Workers were told to take one pill if instructed by the governor. Workers were not asked if they were allergic to KI. They were not told that they would need to take one pill a day for 10 days. They were not told they would need to keep a log of when they took KI. (NUREG-0654, H.10., K.3.a., K.3.b., J.10.e., and J.10.f.)

Corrective Action Demonstrated: The radiological briefing performed by the RO was supplemented by a briefing by the EMC. Staff members were told to carefully review the instructions provided on the Radiological Information Card. Combined briefings and printed instructions included information on (1) how and how often to read the dosimeter, (2)

administrative exposure limits, (3) actions required if a limit is reached, (4) the need to maintain proper records, and (5) instructions to record readings on the Dosimetry/KI Report Form before and upon completion of each mission.

Emergency workers were given a bottle of KI and complete instructions on its use and on where to turn in their instruments and unused KI.

Issue No.: 63-97-15-A-20

Description: The Emergency Medical Services Officer is responsible for ensuring that the list of non-ambulatory residents is current (Conyngham Borough EOP, F.2.1, page F-1). The transportation officer is responsible for making sure people without transportation have a way out in the event of an evacuation. Conyngham Borough EOP, G.2.5, page G-5, states that the estimated number would be 112 and would require three buses. The EMA coordinator said eight people would need transportation and ordered one bus. The coordinator was using a list of special needs dated May 1991. There was no other list available at the EOC. The fire chief said an updated (annually) list was available at the fire station. He stated that it was being revised, but he did not have a copy with him. The staff identified at least four people on the list who had died and others who had moved. There were no phone numbers on the list at the EOC to contact people to find out if they still needed transportation or if they could get a ride. The EOC staff identified two people who needed an ambulance to evacuate. The plan says there are "approximately five non-ambulatory residents. This list maintained [sic] in the EOC." (*Notification and Resource Manual*, page 7, G.) The fire chief later called to say he had checked the list in the fire station and had two more people who would require an ambulance to evacuate. (NUREG-0654, E.7., J.10.c., J.10.d., and J.10.e.)

Corrective Action Demonstrated: During the exercise, care was taken to distinguish between the special-populations group who needed transportation and the general public who were transportation dependent. The Emergency Medical/Transportation Officer, using a current (June 2000) Special Needs List, identified 12 persons who were either hearing- or vision-impaired or were not capable of getting to a general transportation pick-up point. The list contained names and associated addresses, telephone numbers, and medical conditions for each person. The

Medical/Transportation Officer and the EMC decided that one ambulance and one small bus would be needed to transport these people. They called the Luzerne County EOC staff, who simulated providing the needed transportation vehicles.

The Medical/Transportation Officer was aware that it is Luzerne County's responsibility to provide buses for 113 transportation dependent persons living in Conyngham Borough. At 2058, Luzerne County advised the EOC that the buses were en route to the Borough to the predetermined pickup points.

f. **PRIOR ISSUES - UNRESOLVED:** None

2.2.5 HUNTINGTON TOWNSHIP/NEW COLUMBUS BOROUGH

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES - RESOLVED:** Criterion 1.c.1

Issue No.: 63-97-03-A-22

Description: Messages frequently lacked specific required information. The Huntington Township/New Columbus Borough EMC received messages from his Communications Officer. Many messages did not have the time of receipt notations and addresses. The Communications Officer frequently had to leave her position to deliver messages, causing her to be temporarily absent from her position in the Communications Room. (NUREG-0654, A.1.d., A.2.a., and A.2.)

Corrective Action Demonstrated: The messages contained adequate information, including the time of receipt and addresses. The Assistant Communications Officer delivered all message to the EMC, which allowed the Communications Officer to remain posted at the telephone and radio to receive any incoming messages from the Luzerne County EMA.

f. **PRIOR ISSUES - UNRESOLVED:** None

2.2.6 NESCOPECK BOROUGH

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, and 5.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criteria 1.a.1

Issue No.: 63-97-30-A-24

Description: No shift change at Nescopeck Borough was demonstrated, as required by the extent-of-play agreement. (NUREG-0654, A.4 and N.1.a.).

Corrective Action Demonstrated: A 24-hour roster of persons familiar with and capable of carrying out Nescopeck Borough emergency procedures was available in the Nescopeck Borough EOC.

- f. **PRIOR ISSUES - UNRESOLVED:** None

2.2.7 NEWPORT TOWNSHIP EOC

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

2.2.8 SALEM TOWNSHIP

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.c.1, 3.d.1, 3.d.2, and 5.a.3
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES - RESOLVED:** Criteria 1.d.1 and 3.a.1

Issue No.: 63-97-04-A-26

Description: During the actual route alerting demonstration, the Salem Township route alerting personnel were not able to establish communications with the Township EOC. The team attempted to communicate with the Township EOC using the Luzerne County Fire and Ambulance frequency. However, the EOC was monitoring the Pennsylvania Emergency Management Agency (PEMA) radio channel. (NUREG-0654, F.1.2.)

Corrective Action Demonstrated: One of the route alerting vehicles was in use on a non-exercise mission. Route alerting personnel were contacted via radio, and a return message was received. The ability to establish two-way contact with a moving vehicle that would be used for route alerting was adequately demonstrated.

Issue No.: 63-97-05-A-27

Description: The radiological briefing by the Salem Township RO on the use of dosimetry for emergency workers was inadequate. The briefing was limited to instructions to read dosimeters every 30 minutes, record the readings, and return the dosimeter to the EOC at the end of exercise. Consequently, dose limits and other essential information was not included in the briefing, and route alert team members did not know the dose limit (5 R). (NUREG-0654, K.3.b. and K.4.)

Corrective Action Demonstrated: A Deputy RO briefed workers on the use of dosimetry. His briefing was both accurate and complete; he followed the instruction card provided to each worker, demonstrated the correct way to read a dosimeter (horizontal), and advised the emergency workers that turning the dosimeter 90 degrees could change the reading. When questioned about dosimetry, route alerting team members were able to answer all questions promptly and correctly.

f. **PRIOR ISSUES - UNRESOLVED:** None

2.2.9 SHICKSHINNY BOROUGH

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

b. **DEFICIENCY:** None

- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criterion 1.c.1

Issue No.: 63-97-03-A-28

Description: The Shickshinny Borough SOPs (Appendices A-I, Attachment 1-3) for each staffed position in the EOC call for an event-action log (the template is provided in each SOP) to be maintained in conjunction with the use of Emergency Classification Level (ECL)-specific checklists (also provided in the SOPs). None of the staffed positions fully maintained its log. (NUREG-0654, A.1.d, A.2.a., A.2.b., and N.1.a.)

Corrective Action Demonstrated: Each staff member in the Shickshinny Borough maintained a separate log in conjunction with the ECL-specific checklists.

Issue No.: 63-97-03-A-29

Description: The Shickshinny Borough EOP (Section IV.F, page 2) identifies Lake Lehman Senior High School as the site of the alternative EOC, but the EMC and other EOC staff believe it to be Plymouth Township EOC. In an evacuation, this could cause EOC personnel to relocate to the wrong location and adversely impact continuity in emergency operations. (NUREG-0654, A.1.d, A.2.a., A.2.b., and N.1.a.)

Corrective Action Demonstrated: Initially, the EOC staff posted Plymouth as their alternative EOC location. After a discussion with the EMC and reference to the plan, the error in the location was corrected. The Lake Lehman site was correctly posted on the EOC facility board.

- f. **PRIOR ISSUES - UNRESOLVED:** Criteria 3.a.1 and 3.b.1

Issue No.: 63-97-05-A-30

Description: The first shift RO did not properly brief the Category A emergency workers assigned to the Borough EOC about their radiation exposure limits [EOP, Appendix I, Attachment I-4, Section 1.4.2(d)(6)]. He also did not discuss the use of KI, although KI usage was later covered in instructions given to the emergency workers by the

second shift RO. (NUREG-0654, K.3.b., K.4., and N.1.a.)

Reason ARCA Unresolved: RO briefings continue to lack sufficient and accurate information regarding the use of dosimetry and KI for emergency workers. The Shickshinny RO was unfamiliar with the SAE checklist (SOP I.4) and the procedure (Attachment 4, pp. I-18) for distributing bottles of KI and KI tracking forms (I 6-8) to emergency workers. The RO distributed KI at the General Emergency (GE) ECL and read the information on the KI bottle to determine the dose. The RO was not aware of the need to develop and maintain lists of emergency workers who ingested KI.

The RO did not respond to the request at 1741 from Luzerne County and take action to return the control permanent record dosimeter (PRD) to the County or ask the County to dispatch a runner to retrieve the device since the person was unsure about the operation and use of the PRD.

Recommendation: The designated RO should be provided with additional training and easily accessible summary information that can be used to adequately brief emergency workers. A videotape on dosimetry use and a VCR/monitor should be available in the EOC at all times. The RO should ensure that emergency workers in the field are reading, recording, and reporting their dosimetry readings to their appropriate dispatchers and that this information is being transmitted to the RO for review.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

3. SUPPORT COUNTIES

3.1 LACKAWANNA COUNTY

3.1.1 EMERGENCY OPERATIONS CENTER

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

e. **PRIOR ISSUES - RESOLVED:** Objective 5.b.1

Issue No.: 63-97-12-A-32

Description: The extent-of-play agreement required the support county EOC to prepare, coordinate, and disseminate news releases. No news releases were prepared, coordinated, or disseminated. (NUREG-0654, N.1.a.)

Corrective Action Demonstrated: Lackawanna County prepared, coordinate, and disseminated news releases during the exercise.

Issue No.: 63-97-13-A-33

Description: The extent-of-play agreement required the EOC to staff the rumor control activity with two persons. The activity was staffed with only one person. (NUREG-0654, N.1.a.)

Corrective Action Demonstrated: Lackawanna County had its rumor control activity properly staffed in accordance with the extent-of-play agreement.

f. **PRIOR ISSUES - UNRESOLVED:** None

3.1.2 **RECEPTION CENTER (Big Lots Shopping Center)**

a. **MET:** Criterion 1.e.1 and 6.a.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES - RESOLVED:** None

f. **PRIOR ISSUES - UNRESOLVED:** None

3.1.3 **MONITORING/DECONTAMINATION/MASS CARE CENTER (Mid-Valley Elementary and Central Middle School)**

a. **MET:** Criteria 1.e.1 and 6.c.1

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Criterion 6.a.1

Issue No.: 63-00-6.a.1-A-05

Condition: The survey instrument probe, which was covered with plastic, brushed against the evacuees on several occasions. The monitor at the Lackawanna monitoring/decontamination center (Mid-Valley Elementary) did not change or simulate changing the probe cover in order to minimize the possible spread of contamination. In addition, the staff members positioned themselves on the step-on pad with the evacuees while they were conducting monitoring.

Possible Cause: Plastic covers on the probes were not secured close to the probe. The evacuee clothes were bulky and the monitors were not properly trained.

Reference: NUREG-0654, J.10.h. and J.12.

Effect: The mistakes made by the monitoring staff could allow the spread of radiological contamination.

Recommendation: The monitoring staff should receive additional training in implementing procedures to prevent the spread of contamination.

Schedule of Corrective Actions: The Report states that the "survey instrument probe, which was covered in plastic, brushed against the evacuee on several occasions..." When maintaining the proper probe distance during a full body frisk, the potential exist that a probe may touch the individual being frisked. If however the plastic covering picked up contamination, there would be a visual and audible response by the survey instrument. This response would be an indication to the monitor to replace the plastic on the instrument.

Since we do not use live radiological sources when performing frisk during drills it would have been impossible for the monitor to know that the instrument touched the individual.

Therefore, this finding is based more on the artificialities of exercises than on the lack of skill by the monitor. This ARCA should be deleted.

FEMA Response: FEMA Region III RAC and REP staff have reviewed and considered the Commonwealth's response. However, the issue remains. We acknowledge the monitor may not have known his role

in the exercise; however, the extent of play requires the demonstration of proper monitoring techniques.

Issue No.: 63-00-6.a.1-A-06

Condition: Individuals performing monitoring activities at the Lackawanna monitoring/decontamination center (Mid-Valley Elementary) did not maintain properly completed monitoring records of contaminated evacuees and the results of vehicle monitoring.

Possible Cause: The recorders were not familiar with procedures nor was a recorder positioned with each monitor.

Reference: NUREG-0654, J.10.h., J.12., and K.3.a.

Effect: Information could not be retrieved in the future to document that appropriate procedures were taken to ensure the health and safety of evacuees and those conducting radiological monitoring.

Recommendation: Each monitoring team should consist of a monitor and recorder. Additional training should be provided to the recorders and monitors.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criterion 6.a.1

Issue No.: 63-95-18-A-22

Description: The team leader was unsure of the procedures for handling evacuees with fixed contamination. He stated that if three attempts to decontaminate an individual failed, he or she would be sent to the first aid personnel at the center and not referred to a hospital. (NUREG-0654, I.8. and J.12.)

Corrective Action Demonstrated: After an evacuee was decontaminated twice, the Team Leader indicated that the evacuee would be kept isolated and that the monitor would notify the Lackawanna County Coordinator at the EOC and request medical transport to the hospital.

f. PRIOR ISSUES - UNRESOLVED: None

3.2 LYCOMING COUNTY

3.2.1 EMERGENCY OPERATIONS CENTER

a. MET: Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, and 5.b.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES - RESOLVED: None

f. PRIOR ISSUES - UNRESOLVED: None

3.2.2 RECEPTION CENTER (Lycoming Mall)

a. MET: Criterion 1.e.1 and 6.a.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES - RESOLVED: None

f. PRIOR ISSUES - UNRESOLVED: None

3.2.3 MONITORING/DECONTAMINATION/MASS CARE CENTER (McCall Middle School)

a. MET: Criteria 1.e.1, 6.a.1, and 6.c.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ISSUES - RESOLVED: None

f. PRIOR ISSUES - UNRESOLVED: None

3.3 MONTOUR COUNTY

3.3.1 COUNTY EMERGENCY OPERATIONS CENTER

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, and 1.e.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Criterion 5.b.1

Issue No.: 63-00-5.b.1-A-07

Condition: The rumor control staff received 17 rumors at the Montour County EOC, yet a trend was not identified nor was a press release issued that would describe any impact to individuals in Montour County.

Possible Cause: A rumor control tracking system was not used during the exercise.

Reference: NUREG-0654, E.7. and G.4.c.

Effect: The rumor control staff did not identify and inform the PIO of any radiological trends developed from calls received. Therefore, no press release was issued to describe any impact to individuals in Montour County.

Recommendation: A rumor control tracking system should be developed and training should be provided to personnel to assist them in identifying trends and ensuring that the PIO is informed and issues appropriate press releases.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

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

3.3.2 MASS CARE CENTER AND HOST SCHOOL (Diehl Sr. High School)

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

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

3.4 NORTHUMBERLAND COUNTY

3.4.1 COUNTY EMERGENCY OPERATIONS CENTER

- a. MET: Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, and 5.b.1
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: Objective 5.b.1

Issue No.: 63-97-13-A-38

Description: The extent-of-play agreement required the rumor control function to handle 16 calls. Only eight calls were handled. (NUREG-0654, N.1.a.)

Corrective Action Demonstrated: Northumberland County EOC processed 17 rumor control calls during the exercise. In each case, the rumor control staff provided accurate information, either on the spot or following consultation with knowledgeable authorities within or outside the EOC. Rumor trends were monitored for possible inclusion in county news releases prepared to clarify information.

- f. PRIOR ISSUES - UNRESOLVED: None

3.4.2 RECEPTION/MONITORING/DECONTAMINATION/MASS CARE CENTER (Milton Area High School)

- a. MET: Criteria 6.a.1 and 6.c.1
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: Criterion 1.e.1

Issue No.: 63-00-1.e.1-A-08

Condition: When source checks were performed on the five CD V-700 survey meters used at the monitoring/decontamination mass care center (Milton Area Junior High School) in Northumberland County, four meters

registered readings significantly below recommended technical specifications.

Possible Cause: The survey meters might be faulty.

Reference: NUREG-0654, H.10.

Effect: If a survey meter underestimates radiological exposure, evacuees who should be decontaminated might not be, which presents a potential risk to their health.

Recommendation: The CD V-700 survey meters should be tested and replaced, if necessary.

Schedule of Corrective Actions: The survey meters have been replaced. This will be demonstrated during the 2002 SSES biennial exercise.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criterion 6.a.1

Issue No.: 63-97-18-A-39

Description: Thyroid monitoring and screening are not included in the Milton Fire Department procedures; however, they are covered in the County EOP, Annex E, Appendix 4, page E-4-3. Thyroid monitoring was not performed at the Northumberland County Monitoring and Decontamination Center at Milton Area High School. (NUREG-0654, J.12.)

Corrective Action Demonstrated: Thyroid monitoring was properly demonstrated.

- f. **PRIOR ISSUES - UNRESOLVED:** None

3.5 SCHUYLKILL COUNTY

3.5.1 COUNTY EMERGENCY OPERATIONS CENTER

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, and 5.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:**

f. **PRIOR ISSUES - UNRESOLVED:** None

3.5.2 **RECEPTION/MONITORING/DECONTAMINATION/MASS CARE CENTER
(Marian High School)**

a. **MET:** Criterion 6.c.1

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Criteria 1.e.1
and 6.a.1

Issue No.: 63-00-1.e.1-A-09

Condition: No PRDs were issued to the reception center staff at the Schuylkill County reception center (Marian High School).

Possible Cause: The County plan (page E-4-16) states that only those individuals performing monitoring activities need to have permanent record dosimeters. However, the plan states (on page E-4-13) that individuals who meet/direct possibly contaminated people or vehicles should wear the dosimeters because they are considered Category C workers.

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

Effect: Because the individuals were not wearing dosimetry, they had no means to determine how much radiation exposure they might have received.

Recommendation: The Schuylkill County plan should be revised to clearly state that individuals working at a reception center (passing out maps and coming near potentially contaminated persons or vehicles) are required to wear the permanent record dosimeters, like other Category C workers.

Schedule of Corrective Actions: No response received.

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.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

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.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

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

3.6 UNION COUNTY

3.6.1 EMERGENCY OPERATIONS CENTER

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

3.6.2 RECEPTION CENTER (Montandon Elementary School)

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

3.6.3 MONITORING/DECONTAMINATION/MASS CARE CENTER (Lewisburg Middle School)

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

- e. **PRIOR ISSUES - RESOLVED:** None
- f. **PRIOR ISSUES - UNRESOLVED:** None

3.7 WYOMING COUNTY

3.7.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Criteria 1.a.1, 1.b.1, 1.c.1, 1.d.1, 1.e.1, and 5.b.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criterion 1.b.1

Issue No.: 63-95-02-A-27

Description: Since the Wyoming County EOC moved to its current location in October 1994, no generator has been available to provide backup power. (NUREG-0654, H.2. and H.1.)

Corrective Action Demonstrated: An emergency backup generator has been installed at the new EOC facility and is automatically tested each Monday morning.

- f. **PRIOR ISSUES - UNRESOLVED:** None

3.7.2 RECEPTION/MONITORING/DECONTAMINATION/MASS CARE CENTER (Tunkhannock Area Middle and High School)

- a. **MET:** Criteria 1.e.1 and 6.c.1
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES - RESOLVED:** Criterion 6.a.1

Issue No.: 63-97-18-A-46

Description: The Wyoming County Monitoring/Decontamination Center at Tunkhannock High School only had six monitoring teams present. The County EOP, Appendix 4, Attachment E, page E-4-21, states 11 teams are needed. Thus, the extent-

of-play agreement was not followed. (NUREG-0654, N.1.a.)

Corrective Action Demonstrated: The plan was revised to require a total of nine teams. Six teams were present, which is consistent with the extent-of-play agreement.

f. PRIOR ISSUES - UNRESOLVED: Criterion 6.a.1

Issue No.: 63-97-18-A-47

Description: The monitoring of evacuees occurs at a large covered entrance area outside the facility, even during inclement weather. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The setup of the monitoring/decontamination center remains the same. The ORO indicated that the facility cannot be managed differently; in the event of inclement weather, evacuees could wait in their cars until they undergo monitoring.

Recommendation: Wyoming County should consider moving the facility to another location.

Schedule of Corrective Actions: No response received.

4. SCHOOL DISTRICTS (Out of Sequence)

4.1 COLUMBIA COUNTY

4.1.1 EMERGENCY OPERATIONS CENTER

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

4.1.2 BENTON AREA SCHOOL DISTRICT (Benton Junior/Senior High School)

- a. **MET:** Criterion 3.c.2
- b. **DEFICIENCY:** None

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

4.1.3 BERWICK AREA SCHOOL (Salem Elementary)

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

4.1.4 BLOOMSBURG AREA SCHOOL DISTRICT (Beaver Main Elementary)

- a. MET: None
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: Criterion 3.c.2

Issue No.: 63-00-3.c.2-A-12

Condition: A bus driver was not available for interview during the evaluation of the Bloomsburg Area School District.

Possible Cause: The bus driver may have had another commitment or no arrangements for a driver were made.

Reference: NUREG-0654, J.10.c., J.10.d., and J.10.g.

Effect: FEMA could not evaluate the capabilities of the transportation provider to evacuate the students to the reception center.

Recommendation: A bus driver should be available for interview in accordance with the extent-of-play agreement.

Schedule of Corrective Actions: This issue will be addressed and corrected through the 2001 spring training seminar and during the 2001 fall practice exercise, and demonstrated during the 2002 SSES biennial exercise.

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

4.1.5 CENTRAL COLUMBIA SCHOOL DISTRICT (Central Columbia Elementary)

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

4.1.6 COLUMBIA-MONTOUR AREA VOCATIONAL-TECHNICAL SCHOOL

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

4.2 LUZERNE COUNTY

4.2.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Criterion 3.c.2
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

- e. PRIOR ISSUES - RESOLVED: None
 - f. PRIOR ISSUES - UNRESOLVED: None
- 4.2.2 CRESTWOOD SCHOOL DISTRICT (Rice Elementary)**
- a. MET: Criterion 3.c.2
 - b. DEFICIENCY: None
 - c. AREAS REQUIRING CORRECTIVE ACTION: None
 - d. NOT DEMONSTRATED: None
 - e. PRIOR ISSUES - RESOLVED: None
 - f. PRIOR ISSUES - UNRESOLVED: None
- 4.2.3 GREATER NANTICOKE AREA SCHOOL DISTRICT (Greater Nanticoke Area High School)**
- a. MET: Criterion 3.c.2
 - b. DEFICIENCY: None
 - c. AREAS REQUIRING CORRECTIVE ACTION: None
 - d. NOT DEMONSTRATED: None
 - e. PRIOR ISSUES - RESOLVED: None
 - f. PRIOR ISSUES - UNRESOLVED: None
- 4.2.4 HAZLETON AREA SCHOOL (Valley Elementary/Middle School)**
- a. MET: Criterion 3.c.2
 - b. DEFICIENCY: None
 - c. AREAS REQUIRING CORRECTIVE ACTION: None
 - d. NOT DEMONSTRATED: None
 - e. PRIOR ISSUES - RESOLVED: None
 - f. PRIOR ISSUES - UNRESOLVED: None
- 4.2.5 NORTHWEST AREA SCHOOL DISTRICT (Northwest High School)**
- a. MET: Criterion 3.c.2

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

Issue No.: 63-97-16-A-48

Description: The Northwest School District failed to demonstrate the movement of one vehicle over an evacuation route to the host school, although the demonstration is specifically required in the extent-of-play agreement.

Corrective Action Demonstrated: A bus driver from Wasilko Bus Lines drove the 40-minute route from Northwest High School to Dallas Junior High School, the host facility.

- f. PRIOR ISSUES - UNRESOLVED: None

4.2.6 WEST SIDE VOCATIONAL TECHNICAL SCHOOL

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

4.2.7 WILKES-BARRE VOCATIONAL TECHNICAL SCHOOL

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

APPENDICES

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

ACP	-	Access Control Point
A&N	-	Alert and Notification
ARC	-	American Red Cross
ARCA	-	Areas Requiring Corrective Action
AO	-	Agricultural Officer
BRP	-	Bureau of Radiation Protection
CFR	-	Code of Federal Regulations
DRD	-	Direct-Reading Dosimeter
EAS	-	Emergency Alert System
ECL	-	Emergency Classification Level
EMA	-	Emergency Management Agency
EMC	-	Emergency Management Coordinator
EOC	-	Emergency Operations Center
EOP	-	Emergency Operations Plan
EPZ	-	Emergency Planning Zone
FEMA	-	Federal Emergency Management Agency
FTC	-	Field Team Coordinator
KI	-	Potassium Iodide
KLT	-	K.L. Travis and Associates
mR/hr	-	milliroentgen per hour
mR	-	millirem
MSL	-	Mean Sea Level
NRC	-	U.S. Nuclear Regulatory Commission
NUREG-0654	-	NUREG-0654/FEMA-REP-1, Rev. 1, <i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants</i> , November 1980
ORO	-	Offsite Response Organization
PAD	-	Protective Action Decision
PAR	-	Protective Action Recommendation
PEMA	-	Pennsylvania Emergency Management Agency
Penn DOT	-	Pennsylvania Department of Transportation
PIO	-	Public Information Officer
PRD	-	Permanent Record Dosimeter
PSP	-	Pennsylvania State Police

R - Roentgen(s)
RACES - Radio Amateur Civil Emergency Service
RAC - Regional Assistance Committee
REP - Radiological Emergency Preparedness
RERP - Radiological Emergency Response Plan
RM - Radiological Monitor
RO - Radiological Officer
R/hr - Roentgens per hour

SAE - Site Area Emergency
SOP - Standard Operating Procedure
SSES - Susquehanna Steam Electric Station

TCP - Traffic Control Point

USDA - U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who will evaluate the Susquehanna Steam Electric Station exercise on October 3 and November 2, 2000. A single asterisk after the organization's name indicates evaluator Team Leaders. A double asterisk indicates Assistant Team Leaders. The organization represented by each evaluator is indicated by the following abbreviations:

ANL	Argonne National Laboratory
FEMA	Federal Emergency Management Agency
KLTT	K.L. Travis Associates
NRC	U.S. Nuclear Regulatory Commission
USDA	U.S. Department of Agriculture

<u>POSITION</u>	<u>NAME</u>	<u>ORGANIZATION</u>
RAC Chairperson	K. Koob	FEMA Region III
Project Officer	H. Skoczalek	FEMA Region III

1. Biennial Plume Exercise - November 2, 2000 (4 p.m. - 11 p.m.)

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
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COMMONWEALTH OF PENNSYLVANIA

Emergency Operations Center	J. Price	FEMA *
Emergency Operation Facility	R. Bores	NRC
State Police Barracks	P. Roberts	ANL
State Traffic/Access Control (PSP)		
Columbia County	D. Poyer	ANL
Luzerne County	W. Waddell	ANL
DEP/BRB Field Team		
Field Team A	M. Geer	KLTT
Field Team B	F. Bold	ANL

COLUMBIA COUNTY

Emergency Operations Center	R. Helo	FEMA *
	C. Bebrich	ANL **
	R. Schwartz	FEMA
Briar Creek Borough EOC	A. Teotia	ANL
Briar Creek Township EOC	T. Reynolds	FEMA
Route Alerting	R. Jennings	FEMA
Mifflin Township EOC	A. Lookabaugh	ANL

EVALUATION SITEEVALUATORORGANIZATION**LUZERNE COUNTY**

Emergency Operations Center	A. Henryson	FEMA *
	L. Thomas	USDA **
	N. Goldstein	FEMA
Black Creek Township EOC	D. Bell	FEMA
Conyngham Borough EOC	S. Bailey	ANL
Huntington Township/New Columbus East Borough EOC	J. Jackson	ANL
Nescopeck Borough EOC	G. Jacobson	ANL
Newport Township EOC	D. Moffet	ANL
Route Alerting	J. Flynn	ANL
Salem Township EOC	S. Nelson	ANL
Shickshinny Borough EOC	S. Curtis	ANL

SUPPORT COUNTIES

Lackawanna County EOC	A. Hough	FEMA *
Lycoming County EOC	E. Wojnas	ANL
Montour County EOC	B. Lueders	ANL
Northumberland County EOC	C. Saricks	ANL
Schuylkill County EOC	M. Ward	ANL
Union County EOC	M. Willis	ANL
Wyoming County EOC	B. Rospenda	ANL

2. School Drill (Out-of-Sequence) - November 2, 2000 (9:00 a.m. - 11:00 a.m.)**COLUMBIA COUNTY**

Emergency Operations Center	Y. Porter	FEMA *
Benton Area School District (L. Ray Appleman Elementary)	E. Wojnas	ANL
Berwick Area School District (Salem Elementary)	B. Lueders	ANL
Bloomsburg Area School District (Beaver Main Elementary)	B. Rospenda	ANL
Central Columbia Area School District	C. Saricks	ANL
Columbia-Montour Area Vocational- Technical School	M. Ward	ANL

LUZERNE COUNTY

Emergency Operations Center	J. Young	FEMA *
Crestwood School District (Rice Elementary)	M. Willis	ANL
Greater Nanticoke Area School District (Greater Nanticoke Area Middle School)	D. Cray	ANL
Hazleton Area School District (Valley Elementary Middle School)	D. Poyer	ANL

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
Northwest Area School District (Northwest Junior/Senior High School)	W. Waddell	ANL
West Side Vocational-Technical School	M. Geer	KLT
Wilkes-Barre Vocational- Technical School	F. Bold	ANL

MONTOUR COUNTY

Mass Care Center/Host School (Diehl Senior High School)	G. Goforth	ANL
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3. Out-of-Sequence Field Activity - November 2, 2000 (7:00 p.m. - 9:00 p.m.)

NORTHUMBERLAND COUNTY

Reception Center/Mass Care/ Monitoring /Decontamination Center (Milton Area High School)	P. Kier	ANL
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4. Out-of Sequence Drill - Tuesday, October 3, 2000 (7:00 p.m. - 9:00 p.m.)

COLUMBIA COUNTY

Emergency Worker Monitoring/ Decontamination Station (Columbia-Montour Vocational Technical School)	A. Henryson	FEMA
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LUZERNE COUNTY

Emergency Worker Monitoring/ Decontamination Station (Wright Township Fire Hall)	R. Helo	FEMA
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LACKAWANNA COUNTY

Reception Center (Big Lots Shopping Center)	J. Price	FEMA
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LACKAWANNA COUNTY

Mass Care/Monitoring/ Decontamination Center Mid-Valley Elementary and Central Middle Schools)	Y. Porter	FEMA
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<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
LYCOMING COUNTY		
Reception Center (Lycoming Mall)	L. Slagle	ANL
Mass Care/Monitoring/ Decontamination Center (McCall Middle School)	L. Slagle	ANL
SCHUYLKILL COUNTY		
Reception Center/Mass Care/ Monitoring /Decontamination Center (Marian High School)	J. Simonin	ANL
UNION COUNTY		
Reception Center (Montandon Elementary School)	B. VanPelt	ANL
Mass Care/Monitoring/ Decontamination Center (Lewisburg Middle School)	E. Wojnas	ANL
WYOMING COUNTY		
Reception Center/Mass Care/ Monitoring /Decontamination Center (Tunkhannock Area Middle and High School)	D. Blunt	ANL

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix contains descriptions of the exercise objectives scheduled for demonstration at the Susquehanna Steam Electric Station exercises on October 3 and November 2, 2000; the out-of-sequence school drill conducted on November 2, 2000; the out-of-sequence reception center, monitoring/decontamination centers, and stations, and mass care centers drills conducted on October 3, 2000; and the extent-of-play agreement approved by FEMA, Region III, on October 13, 2000.

The exercise objectives, contained in the *Radiological Emergency Preparedness Exercise New Evaluation Methodology*, dated October 2000, 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*, dated November 1980.

Because the exercise objectives 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 specific objectives.

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, D.4, E.1, E.2, and 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. At each facility a roster and/or procedures indicating 24-hour staffing capability for **key** positions (those emergency personnel necessary to carry out critical functions), as indicated in the plan and/or procedures, should be provided to the evaluator (**demonstration of a shift change is not required**). In addition, 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 an out-of-sequence demonstration 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 otherwise indicated in the extent-of-play agreement.

Sub-element 1.b - FACILITIES

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

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 as they would be in an actual emergency, unless otherwise indicated in the extent-of-play agreement.

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, and A.2.b)*

EXTENT OF PLAY

All activities associated with direction and control 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.

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 and F.2)*

EXTENT OF PLAY

Communications systems will only be evaluated for this Criterion if there have been substantial changes in equipment or mission, unless a communications breakdown adversely impacts the exercise. 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 and uses a separate power source. 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.

All activities associated with the management of communications capabilities 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.

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., J.10.a, J.10.b, J.10.e, J.10.f, J.10, J.10.k, J.11, and K.3.a)

EXTENT OF PLAY

Equipment within the facility(ies) 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.

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

Dosimeters should be inspected for electrical leakage at least annually and replaced, if necessary. CDV-138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, 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 or provided in the Annual Letter of Certification submission. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, a letter from the drug manufacturer should be available that documents a formal extension of the KI expiration date.

At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., 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 otherwise indicated in the extent-of-play agreement.

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

EXTENT OF PLAY

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established protective action guides (PAG) for KI administration. The KI decision-making process should involve close coordination between appropriate assessment and decision-making staff.

All activities 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.

State Specific - Extent of Play

The counties of Columbia and Luzerne will demonstrate this decision making process, simulating a loss of communications with the Commonwealth of Pennsylvania and with the other risk county. This demonstration will be a discussion by the senior county officials, with a PAG for KI administration being determined. The demonstration will include a discussion of the procedure to advise emergency workers to take KI. If during this demonstration the PAG is that emergency workers are instructed to take KI, that message will not be transmitted to the emergency workers. This demonstration will be observed by FEMA, however, will not be a part of the formal evaluation.

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 on-site and off-site environmental conditions. (NUREG-0654, I.8, I.10, I.11, and Supplement 3)*

State Specific - Extent of Play

Not applicable.

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 and J.10.m)*

State Specific - Extent of Play

Not applicable.

Sub-element 2.c - PROTECTIVE ACTION DECISIONS FOR 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.c, J.10.d, J.10.e, and J.10.g)*

State Specific - Extent of Play

Not applicable.

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 planning Criteria. (NUREG-0654, I.8 and J.11)*

State Specific - Extent of Play

Not applicable.

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 the radiological conditions and Criteria in the ORO's plan and/or procedures. (NUREG-0654, A.1.b, I.10, M.1., M.3., and M.4.)*

State Specific - Extent of Play

Not applicable.

**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.)*

EXTENT OF PLAY

OROs should demonstrate the capability to provide appropriate direct and permanent record 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 take into consideration Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the OROs plans and procedures.

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

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

All activities 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.

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 record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained. (NUREG-0654, E. 7, J. 10.e, and J.10.f)

EXTENT OF PLAY

OROs 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.

All activities 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.

State Specific - Extent of Play

Pennsylvania Plans do not call for issuance of KI to the general public. Monitoring/decontamination centers and station personnel are not issued DRDs/KI since the centers/stations are located outside the EPZ.

Sub-element 3.c - IMPLEMENTATION OF PROTECTIVE ACTIONS FOR SPECIAL POPULATIONS

Criterion 3.c.1: *Protective action decisions are implemented for special population groups within areas subject to protective actions. (NUREG-0654, E.7, J.9., J.10.c, J.10.d, J.10.e, and J.10.g)*

EXTENT OF PLAY

Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special population groups. OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

All implementing activities associated with protective actions 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 otherwise indicated in the extent-of-play agreement.

State Specific - Extent of Play

Contact with special populations and resources providers will actually be made once during the exercise. Additional contacts may be simulated; however, for exercise purposes all simulated or actual contacts should be logged.

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

EXTENT OF PLAY

In accordance with plans and/or procedures, OROs and/or officials of participating public and private schools should demonstrate the capability to make prompt decisions on protective actions for students. School officials should demonstrate that the decision making process for protective actions considers (e.g., 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 (e.g., whether the students are still at home, en route to the school, or at the school).

Implementation of protective actions should be completed subject to the following provisions: 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 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 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 participating school(s) or 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.

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

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.10.j, and J.10.k)

EXTENT OF PLAY

OROs should demonstrate the capability to select, establish, and staff appropriate traffic and access control points consistent with evacuation/sheltering decisions, 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 agreement.

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 specified above or indicated in the extent-of-play agreement.

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

EXTENT OF PLAY

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

State Specific - 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 should be logged. (*Risk Counties only*)

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 and J.11)*

State Specific - Extent of Play

Not applicable.

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, E.5, E.7, J.9, and J.11)*

State Specific - Extent of Play

Not applicable.

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 and M.3)*

State Specific - Extent of Play

Not applicable.

**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.8, I.9, and I.11)*

EXTENT OF PLAY

Field teams should have 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 consistent with the intended use of the instrument and the ORO's plans and procedures, including radiological protection/exposure control of team members and detection of activity on the air sample collection media. All instruments, including air sampling flow meters, should be operated, maintained, and calibrated in accordance with the manufacturer's recommendations (or at least annually for the CDV-700 series or if there are no manufacturer's recommendations for a specific instrument). A label indicating such calibration should be on each instrument or verifiable by other means. 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 otherwise indicated in the extent-of-play agreement.

State Specific - 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 (South Eastern Regional Office) will demonstrate ambient radiation monitoring, 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 six predetermined monitoring points and perform actual radiation measurements at the first three locations and simulated measurements at the remaining three locations. An actual air sample will be taken at the first predetermined location. Teams will then take two 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 SSES West Building at 4:00 p.m. the day of the exercise.

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

State Specific - Extent of Play

Not applicable.

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.8, I.9, and I.11)*

EXTENT OF PLAY

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates 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. The methodology, including contamination control, and instrumentation will be in accordance with the ORO plan and/or procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, 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 otherwise indicated in the extent-of-play agreement.

State Specific - 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 (South Eastern Regional Office) will demonstrate ambient radiation monitoring, 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 six predetermined monitoring points and perform actual radiation measurements at the first three locations and simulated measurements at the remaining three locations. An actual air sample will be taken at the first predetermined location. Teams will then take two 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 SSES West Building at 4:00 p.m. the day of the exercise.

Sub-element 4.b - POST PLUME PHASE FIELD MEASUREMENTS AND SAMPLING

State Specific - Extent of Play

Not applicable.

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 and J.11)*

State Specific - Extent of Play

Not applicable.

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, I.8, I.9, and J.11)*

State Specific - Extent of Play

Not applicable.

Evaluation Area 5
EMERGENCY NOTIFICATION & 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: 1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; 2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; 3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and 4) a closing statement asking the affected and potentially affected population to stay tuned for additional information. (10 CFR Part 50, Appendix E & NUREG-0654, E. 1, E.4, E.5, E.6, and E.7)*

EXTENT OF PLAY

Responsible OROs 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 four items listed above in criterion 5.a.1.

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.

Criterion 5.a.2: *Activities associated with primary alerting and notification of the public are completed within 15 minutes of verified notification from the utility of an emergency situation requiring urgent action (fast-breaking situation). The initial instructional message to the public must include as a minimum: 1) identification of the State or local government organization and the official with the authority for providing the alert and message; 2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; 3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and 4) a closing statement asking the affected and potentially affected population to stay tuned for additional information. In addition, the ORO must demonstrate the capability to contact, in a timely manner, an authorized offsite decision-maker relative to the nature and severity of the event, in accordance with plans and procedures. (10 CFR Part 50, Appendix E and NUREG-0654, E. 1, E.3, E.5, E.6, and E.7)*

State Specific - Extent of Play

Not applicable.

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. and Appendix 3.B.2.c)*

EXTENT OF PLAY

OROs 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 (e.g. information required by criterion 5.a.1).

For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected routes 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 (e.g., 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 needs only 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 (e.g., 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 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.

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, E.7, G.3.a, G.4.a, G.4.b, and 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 OROs 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 to assist the public in carrying out protective action decisions provided to them (e.g., 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, rumor control telephone number, etc.). OROs should demonstrate the capability to use language that is clear and understandable to the public, including tribes, within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas. The emergency information should be all-inclusive by including previously identified protective action areas that are still valid as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures.

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

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

OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute press 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 press 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 press releases) and media information kits should be available for dissemination to the media.

OROs should demonstrate that an effective system is in place for dealing with rumors. Rumor control staff should demonstrate the capability to provide or obtain accurate information for callers

or refer them to an appropriate information source. Information from the rumor control 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 press 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 otherwise indicated in the extent-of-play agreement.

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 and K.5.b.)*

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. Expected demonstration should include 1/3 of the monitoring teams/portal monitors required to monitor within 12 hours 20% of the population allocated to the facility. Prior to using a 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 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 (e.g. 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 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 vehicle contamination. The capability to register individuals upon completion of the monitoring and decontamination activities should be demonstrated.

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.

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.

State Specific - Extent of Play

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 minimum of 10 per cent of the appropriate strip maps or directions will be made available for the demonstration. Attempts will be made to solicit volunteers who are not personally involved in the REP program.

(NOTE: Monitoring does not take place at Reception Centers.)

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(ies) and separation of contaminated and non-contaminated (clean) individuals.

At the 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. Transporting of the contaminated person will be explained but not demonstrated. A CD V-700, or other survey meter, will be issued to each team. PRDs will be simulated.

At the 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. Transporting of the contaminated person will be explained but not demonstrated. A CD V-700, or other survey meter, will be issued to each team. PRDs will be simulated.

Risk and Support counties may, during this exercise, utilize portal monitors to monitor simulated evacuees and/or emergency workers. In the instances where a portal monitor is utilized 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. 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.

Mass care center locations are collocated with monitoring/decontamination centers.

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)*

EXTENT OF PLAY

The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the ORO's plans and procedures. Specific attention should be given to equipment, including vehicles that were 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 in order to provide an opportunity for evaluators to conduct a walk-through of the area. Monitoring procedures should be demonstrated for a minimum of one vehicle. Decontamination capabilities 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.

State Specific - 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.

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. Managers demonstrate the procedures to assure that evacuees have been monitored for contamination and have been decontaminated as appropriate prior to entering congregate care facilities. (NUREG-0654, J.10.h., 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, the adequacy of physical facilities, equipment, personnel, supplies, and procedures for the acquisition and management of supplies. **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 (e.g., cots, blankets, sundries, and large-scale food supplies) need not be physically available at the facility (ies). 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.

State Specific - Extent of Play

The risk and 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."

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 3rd, 2000 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 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 - 9:30 p.m. on October 3rd, 2000.

Chapter locations and points of contact are as follows:

Bloomsburg Chapter
615 Market Street
Bloomsburg, PA 17815
(570) 784-1395

Lycoming County Chapter
320 E 3d Street
Williamsport, PA 17701
(570) 326-9131

Greater Berwick Chapter
344 Market Street
Berwick, PA 18603
(570) 752-7221

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

Scranton Chapter
156 South Franklin Street
Scranton, PA 18510
(570) 344-7281

Wyoming Valley Chapter
156 South Franklin Street
Wilkes-Barre, PA 18701
(570) 823-7176

Danville Chapter
41 Vine Street
Danville, PA 17821
(570) 275-1441

Sunbury Area Chapter
30 N 5th Street
Sunbury, PA 17801
(570) 286-4411

Union County Chapter
109 Farley Circle, Box 82
Lewisburg, PA 17837
(570) 524-0400

ARC in Schuylkill
and Eastern Northumber-
land County
1492 Laurel Blvd.
Pottsville, PA 17901
(570) 622-9550

Upper Northumberland
County Chapter
580 Mahoning Street
Milton, PA 17847
(570) 742-9551

Hazleton Chapter
21 North Church Street
Hazleton, PA 18201
(570) 455-9517

Sub-element 6.d - TRANSPORTATION AND TREATMENT OF CONTAMINATED INJURED INDIVIDUALS

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, K.5.b, L.1, and L.4)*

EXTENT OF PLAY

OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. However, to avoid taking an ambulance out of service, any vehicle (e.g., car, truck, or ambulance) may be utilized to transport a simulated victim to the medical facility. If an ambulance is used, normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. This 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 simulated victim may be performed prior to transport, done en route, 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.

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

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.

State Specific - Extent of Play

Demonstration May 24, 2000, Penn State Geisinger Wyoming Valley Hospital.

**Susquehanna Steam Electric Station 2000
Extent of Play Demonstration Tables**

RISK COUNTY	DEMONSTRATION FOR EOC MOBILOZATION FOR COUNTIES	
	DATE	Time
Columbia	November 2, 2000	Exercise Scenario
Luzerne	November 2, 2000	Exercise Scenario
Lackawanna	November 2, 2000	Exercise Scenario
Lycoming	November 2, 2000	Exercise Scenario
Montour	November 2, 2000	Exercise Scenario
Northumberland	November 2, 2000	Exercise Scenario
Schuylkill	November 2, 2000	Exercise Scenario
Union	November 2, 2000	Exercise Scenario
Wyoming	November 2, 2000	Exercise Scenario

RISK COUNTY	DEMONSTRATION FOR EOC MOBILOZATION FOR MUNICIPALITIES		
	MUNICIPALITY	DATE	
Columbia	Beaver Township	November 2, 2000	
	Berwick Township	November 2, 2000	
	Briar Creek Borough	November 2, 2000	
	Briar Creek Township	November 2, 2000	
	Fishing Creek Township	November 2, 2000	
	Mifflin Township	November 2, 2000	
	North Center Township	November 2, 2000	
	South Center Township	November 2, 2000	
	Luzerne	Black Creek Township	November 2, 2000
		Butler Township	November 2, 2000
Conyngam Borough		November 2, 2000	
Conyngam Township		November 2, 2000	
Dorrance Township		November 2, 2000	
Hollenback Township		November 2, 2000	
Hunlock Township		November 2, 2000	
Huntington Township *		November 2, 2000	
Nanticoke City		November 2, 2000	
Nescopeck Borough		November 2, 2000	
Nescopeck Township	November 2, 2000		
	New Columbus Borough *	November 2, 2000	
	Newport Township	November 2, 2000	
	Nuangola Borough	November 2, 2000	
	Salem Township	November 2, 2000	

RISK COUNTY	DEMONSTRATION FOR EOC MOBILOZATION FOR MUNICIPALITIES	
	Shickshinny Borough	November 2, 2000
	Slocum Township	November 2, 2000
	Sugarloaf Township	November 2, 2000
	Union Township	November 2, 2000

* Joint EOC

a. One reception center in each support county.

COUNTY	DEMONSTRATION of Reception Centers	
	DATE	Time
Lackawanna	October 3, 2000	7:00 p.m. - 9:30 p.m.
Lycoming	October 3, 2000	7:00 p.m. - 9:30 p.m.
Northumberland	November 2, 2000	7:00 p.m. - 9:30 p.m.
Schuylkill	October 3, 2000	7:00 p.m. - 9:30 p.m.
Union	October 3, 2000	7:00 p.m. - 9:30 p.m.
Wyoming	October 3, 2000	7:00 p.m. - 9:30 p.m.

COUNTY	Reception Centers	
	Location	Quantity
Lackawanna	Big Lots Parking Lot	1
Lycoming	Lycoming Mall	1
Northumberland	Milton High School	1
Schuylkill	Marion High School	1
Union	Montandon Elementary School	1
Wyoming	Tunkhannock High School	1

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

COUNTY	DEMONSTRATION of Mass Care Centers / Host School	
	DATE	Time
Lackawanna	October 3, 2000	7:00 p.m. - 9:30 p.m.
Lycoming	October 3, 2000	7:00 p.m. - 9:30 p.m.
Montour	November 2, 2000 *	School Exercise Scenario
Northumberland	November 2, 2000	7:00 p.m. - 9:30 p.m.
Schuylkill	October 3, 2000	7:00 p.m. - 9:30 p.m.
Union	October 3, 2000	7:00 p.m. - 9:30 p.m.
Wyoming	October 3, 2000	7:00 p.m. - 9:30 p.m.

* Montour County Host School for Berwick School District.

COUNTY	Mass Care Center Locations / Host School	
	Location	Quantity
Lackawanna	Mid Valley Elementary and Central Middle Schools	1
Lycoming	McCall Middle School	1
Montour	Fred W. Diehl Senior High School (Host School for Berwick only)	1
Northumberland	Milton Junior High School	1
Schuylkill	Marion High School	1
Union	Lewisburg Middle School	1
Wyoming	Tunkhannock High School and Middle School	1

c. Emergency Worker monitoring and decontamination station for each Risk County.

County	Location	Date
Columbia	Columbia Montour Area Vocational Technical School	October 3, 2000
Luzerne	Wright Township Fire Department	October 3, 2000

d. One Hearing Impaired Notification Demonstration by one municipality in each risk county.

County	Location	Date
Columbia	Briar Creek Township	November 2, 2000
Luzerne	Newport Township	November 2, 2000

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): (NOTE: All FEMA/PEMA personnel meet at the demonstration locations.)

COUNTY	SCHOOL DISTRICT	SCHOOLS
Columbia	Berwick	Salem Elementary School
Columbia	Benton (None in EPZ)	L. Ray Appleman Elementary
Columbia	Bloomsburg	Beaver Main Elementary
Columbia	Central Columbia (None in EPZ)	Central Columbia Elementary
Columbia	Columbia Montour Area Vocational - Technical School (None in EPZ)	Same
Luzerne	Crestwood (None in EPZ)	Rice Elementary School
Luzerne	Greater Nanticoke Area	John S. Fine High School
Luzerne	Hazelton Area	Valley Elementary School
Luzerne	Northwest Area	Northwest High School

COUNTY	SCHOOL DISTRICT	SCHOOLS
Luzerne	West Side Vocational -Technical-School (None in EPZ)	Northwest High School
Luzerne	Wilkes-Barre Vocational - Technical School (None in EPZ)	Northwest High School

Traffic and Access Control Points

- a. One PSP Traffic Control Point (TCP) per risk county.
- b. One PSP Access Control Point (ACP) per risk county. (TCP and ACP locations may be the same, if so listed in the plan)
- c. The Pennsylvania State Police will brief at the PSP Wyoming Barracks, and actually deploy to and station one person at the TCP/ACP specified below.
- d. The PSP TCP/ACP demonstrations will be performed out of sequence in a demonstration window at 7:00 p.m. to 9:30 p.m. on November 2nd, 2000.

These (TCP and ACP) are as follows:

RISK COUNTY	TCP LOCATIONS	ACP LOCATIONS
Columbia	TCP 61 - at the intersection of I-80 and US Route 11, South Center Township	ACP 121 - at the intersection of I-80 and US Route 11, South Center Township
Luzerne	TCP 14 - at the intersection of SR 2042 and I-81, Nuangola Road, Rice Township	ACP 224 - at the intersection of SR 2042 and I-81, Nuangola Road, Rice Township

- 2. 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 no occur during the exercise.
 - a. 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 7:00pm - 9:30pm on November 2nd, 2000.

These municipal/regional police forces are:

RISK COUNTIES	
Columbia	Luzerne
Beaver Township	Black Creek Township
Berwick Township	Butler Township
Briar Creek Borough	Conyngham Borough
Fishing Creek Township	Conyngham Township

RISK COUNTIES	
Mifflin Township	Dorrance Township
North Center Township	Hollenback Township
	Hunlock Township
	Huntington Township *
	Nanticoke City
	Nescopeck Borough
	Nescopeck Township
	New Columbus Borough *
	Newport Township
	Nuangola Borough
	Salem Township
	South Center Township
	Shickshinny Borough
	Slocum Township
	Sugarloaf Township
	Union Township

* Joint EOC

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events (Exercise Scenario) used as the basis for invoking emergency response actions by OROs during the SSES exercises on October 3 and November 2, 2000.

This exercise scenario was submitted by the Commonwealth of Pennsylvania and approved by FEMA Region III on October 13, 2000.

Specific scenario events were generated during the exercise by the Plant Reference Simulator computer, operated by Pennsylvania Power & Light Company, at the site. The scenario utilized actual field monitoring team data transmissions and actual meteorological conditions. Backup information was available in case the simulator computer malfunctioned.

During the exercise, controllers from the Commonwealth of Pennsylvania gave "inject messages," containing scenario events or simulated data, to those persons who would normally receive notification of such events, in order to invoke response actions by OROs.

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

SCENARIO SUMMARY

The scenario starts with SSES Units 1 and 2 at 100% power. Routine work is in progress in both units.

Unit 1 turnover items:

1. 'B' Turbine Building chiller is out of service.
2. Reactor core isolation cooling is out of service for preventative maintenance. The flow surveillance will be conducted some time during this shift.
3. The nuclear system engineer is pursuing resolution of the discharge pressure issue for the control rod drive pump.
4. Containment nitrogen usage has increased slightly. A containment instrument gas investigation is in progress.
5. Unidentified drywell leakage is 0.5 gallons per minute and steady.

Unit 2 turnover items:

1. Maintenance/troubleshooting of the traversing incore probe system is in progress following failure of the drive mechanism to respond during scheduled traversing incore probe runs.

2. System Engineering is trying to resolve the electrohydraulic control for the standby pump autostart issue.

Common turnover items:

1. 'E' Diesel Generator has been substituted for the 'C' Diesel Generator for jacket water system leak repair.
2. Transmission line inspections are scheduled for 0900 hours the following day.

The scenario begins with the receipt of a seismic monitor alarm in the control room. The alarm indicates that a small earthquake (less than Operating Basis Earthquake) has occurred. The operations crew responds and contacts an offsite agency to confirm that the event was seismically induced. The agency confirms that a small earthquake occurred roughly 20 miles northwest of the site. An Unusual Event is declared around 1550 in accordance with Emergency Action Level (EAL) 13.1, and the required offsite notifications are made. The nuclear emergency response organization may be called out as a precautionary measure at this time, although this action is not required until an Alert is declared. A plant walk down inspection is ordered to look for potential damage. This inspection by in-plant teams reveals only slight earthquake damage (e.g., unsecured objects moved). There is no apparent damage to plant equipment. Plant operation continues at 100% power. The required surveillance procedures are performed on the emergency diesels and the fire protection system.

A short time later, minor oscillations are observed in the main turbine control valves. These oscillations continue and increase in severity. The main turbine trips, and a reactor scram occurs. The control rods do not fully insert, and reactor power remains at roughly 15%. An Alert is declared around 1700 in accordance with EAL 11.2. All required notifications are made, and site accountability is performed. If not done previously, the nuclear emergency response organization is activated.

Operators attempt to manually insert control rods, but this effort proceeds slowly. Standby liquid control is manually initiated. Main steam isolation valves (MSIV) remain open, with the turbine bypass valves controlling reactor pressure. Feed water is used to control the level of the reactor pressure vessel. At 1725, a small amount of fuel cladding is damaged because of the asymmetric flux patterns and reduced feedwater temperature. Fission products are released into the steam lines, then (via the off gas system) to the environment. The presence of a few minor steam leaks in the turbine building also allows some steam to leak into the turbine-building atmosphere, from which it is released to the environment via the turbine building heating, ventilation, and air conditioning (HVAC) system. These releases are detectable by the turbine building's split particulate iodine and noble gas system, but are very minor. Operations personnel

consider manually isolating the MSIVs at this time to reduce the release of radioactive material to the environment. However, because these releases are so minor, and because of the preference to use the main condenser as a heat sink, this action is not expected to be implemented. Primary containment radiation levels are slightly elevated as a result of the cladding failure. All other primary containment parameters are normal.

The Technical Support Center is activated around 1800 and takes control of the emergency. The EOF staff arrives and prepares for turnover. A post-accident sampling system sample is requested as a result of the potential fuel cladding failure. Roughly 30 minutes after the partial anticipated transient without scram (ATWS) has occurred, the Hot Shutdown Boron weight is injected by the standby liquid control system, and the reactor is sub-critical for hot conditions. Manual insertion of control rods continues. A plant cool down will not be initiated until the Cold Shutdown Boron weight has been injected, roughly 25 minutes later.

At this time, the Main Turbine Bypass Valves fail closed, causing the loss of the main condenser heat sink, and producing a pressure transient in the reactor. This transient causes the fuel cladding (which was already in a degraded state as a result of the partial ATWS) to experience additional failure. Main steam line radiation levels increase, and the MSIVs isolate. This condition triggers a second Alert, in accordance with EAL 3.2 and 18.2. A small leak path through the MSIVs (i.e., less than that permitted by plant technical specifications) allows a small amount of fission products to continue to be exhausted to the atmosphere via the turbine building HVAC systems. With the MSIVs isolated, the high-pressure coolant injector (HPCI) will be used for reactor level control, and the safety/relief valve will be used as needed for reactor pressure control. If not already done, both loops of residual heat removal will be placed in operation for suppression pool cooling. An in-plant team will be used to support this activity.

Later, around 1835, a small steam leak occurs in the HPCI steam supply piping. Over time, this leak increases in size, and the high temperature isolation set point of the HPCI room is reached. The HPCI isolation valves fail to close. (The power supply breaker for the inboard HPCI isolation valve [hand valve 155F002] fails in mid-stroke, and the HPCI outboard isolation valve [HV155F003] binds in mid-position. An in-plant team is assembled to repair these HPCI valve/breaker problems so that the HPCI can be isolated.) The steam leak into the HPCI room continues, triggering declaration of a Site Area Emergency. The Emergency Director/Recovery Manager declares a Site Area Emergency around 1910 in accordance with EAL 18.3, and the required notifications are made. A simulated site evacuation is also performed.

As a result of the steam leakage into the reactor building, radiation levels increase. The increased radiation levels in the

reactor building invalidate the split particulate iodine and noble gas system readings. The ongoing releases now become unmonitored, and an unfiltered release to the environment occurs around 1955. An in-plant team is assembled to obtain the post-accident vent sampling system data. At about this time, the leak in the HPCI room causes the HPCI room blowout panel to open, producing a release directly to the environment. A General Emergency is declared based on EAL 4.4 (General Criteria). A short time later, dose projections based on offsite readings indicate that thyroid doses may exceed 5 R/h to the thyroid, which triggers declaration of a General Emergency, in accordance with EAL 15.4.b. The Recovery Manager declares the General Emergency around 2035, and the required notifications are made. The PAR to evacuate out to a distance of 10 miles is also made at this time.

Plant operators perform a rapid depressurization of the reactor vessel to reduce the magnitude of the release. This action has some limited benefits, but the release continues at a slightly reduced rate.

At 2100, the in-plant team is successful in repairing the HPCI inboard valve power supply breaker and the valve is closed, thereby isolating the steam leak into the HPCI room and substantially reducing the release to the environment. The field monitoring teams detect this reduction around 2130.

When all objectives for the exercise have been met, the onsite Lead Controller terminates activities around 2200. The offsite activities terminate around 2300 or sooner if all objectives have been demonstrated.

APPENDIX 5

PLANNING ISSUES

This appendix contains the Planning Issues assessed during the October 3 and November 2, 2000, exercise at SSES. 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.

Columbia County EOC

Issue No.: 63-00-5.b.1-P-01

Condition: The Columbia County plan does not adequately implement FEMA EAS guidance and does not include the procedures used by the PIO to coordinate EAS message content and broadcasting with EAS station personnel.

- The plan does not make a clear distinction between EAS messages, special news broadcasts, and general news releases consistent with FEMA EAS guidance. All of the eight messages sent to EAS stations were identified as EAS messages even though, at most, only two of the messages would qualify as EAS messages (most were either special news broadcasts or news releases) – there were only two EAS activations during the exercise.

- The PIO explained the undocumented procedures as follows: a photocopy of each PEMA Initial Notification form used to notify the counties of an A&N activation is faxed to the primary EAS station. The PIO calls the station to verify receipt of the document and provides instructions concerning its use.
- The copy of the station manager's EAS information packet does not contain written procedures for coordinating use of the prescribed messages and PEMA Initial Notification forms. It also omitted some "EAS" messages, and the titles of some messages were inconsistent with the titles shown in the plan. The CCN designations listed on the prescribed messages provided in the packet and faxed to EAS stations (which are used by the PIO to communicate precise information to EAS station staff about which prescribed message to select for broadcast) are not listed in the plan.

Possible Cause: The County plan does not adequately reflect FEMA's EAS guidance. Additionally, the PIO implementation procedures (activities) are ambiguous.

Reference: NUREG-0654, E.5., E.7., G.3.a., G.4.a, G.4.b., and G.4.c.

Effect: Individuals responsible for the PIO functions may inadvertently confuse the public and inhibit emergency response personnel from protecting the health and safety of the public.

Recommendation: The County RERP sections should be updated to reflect current EAS guidance and the implementing procedures should be clarified.

Schedule of Corrective Actions: 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.

Luzerne County EOC

Issue No.: 63-00-3.c.2-P-02

Condition: The Luzerne County RERP states that lists of handicapped and hearing-impaired residents are maintained on file in the respective municipal EOCs. However, no list was available in the County EOC.

Possible Cause: The plan guidance is no longer valid.

Reference: NUREG-0654, J.10.c., J.10.d., and the Luzerne County RERP, Annex E, Appendix 7, page 3.

Effect: The current method of maintaining the lists only in the municipalities could cause confusion among County and municipal workers regarding who is responsible for maintaining the list.

Recommendation: The County plan should be revised to require that the County be sent a current list of handicapped and hearing-impaired residents so that the list is available whenever the municipal EOCs are not operational.

Schedule of Corrective Actions: 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.

Issue No.: 63-00-3.c.2-P-03

Condition: There were inconsistencies within the Luzerne County EOP. Early in the exercise, one school requested that an amateur communication person (simulated) be sent to their location. This responsibility is not addressed in Annex E, Appendix 14, School Services, but is identified in Appendix 2, Attachment C, Amateur Communications Assignment, paragraph B.

Possible Cause: The plan, when updated, did not cross-reference this aspect of emergency response.

Effect: Someone not familiar with the plan and emergency response could forget to send an amateur communications representative to the schools as required in the plan. During the actual school exercise, this aspect of emergency response was adequately demonstrated.

Reference: NUREG-0654, F.1.b.

Recommendation: Page E-14-3, paragraph 4, item 6, should be revised to read "at SAE or if requested earlier by a school district, dispatch amateur communication personnel. See Appendix 2, Attachment C, paragraph B."

Schedule of Corrective Actions: 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.

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).

Cause: The plan was not updated as required by NUREG-0654 in a timely manner.

Effect: Outdated post plume information on agricultural food and water could result in inappropriate protective action decisions.

Reference: NUREG-0654, P.4.

Recommendations: The plan should be updated to include the updated FDA guidance within the next 90 days.

Schedule of Corrective Actions: 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.

Conyngham Borough EOC

Issue No.: 63-00-3.c.2-P-05

Condition: The notification list in the Conyngham Borough RERP should be checked for accuracy and changes made accordingly. The EOC staff stated Growing Years Child Care Center is not located in Conyngham Borough, but in Sugarloaf Township. Therefore, the center should be deleted from the Conyngham Borough plan and the Sugarloaf Township plan should be checked to confirm that the center is included in their notification list.

Possible Cause: Conyngham Borough EOC staff felt that the Borough boundaries did not reach the Growing Years Child Care Center

Reference: NUREG-0654, J.10.c. and J.10.d.; and Conyngham Borough RERP, Notification and Resources Manual, Section H, page 8.

Effect: The Growing Years Child Care Center may not receive notification of an incident at SSES from either the Conyngham Borough or Sugarloaf Township EOC.

Recommendation: The correct location of the Growing Years Child Care Center should be determined and the center should be listed in the appropriate RERP for notification purposes.

Schedule Of Corrective Actions: 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.

Issue No.: 63-00-1.b.1-P-06

Condition: The Conyngham Borough RERP does not correctly identify the location of the EOC. The plan states the location of the EOC is at Conyngham Borough Building on Main Street and Conyngham;

however, it is on the second floor of the public works garage, at the corner of Main Street and Sugarloaf Avenue.

Possible Cause: Renaming of local streets occurred and the REOP was not amended.

Reference: NUREG-0654, H. and Conyngham Borough RERP, page 2.

Effect: County or other officials that may need to locate the Conyngham Borough EOC would experience difficulty finding the building without the correct address.

Recommendation: The plan should be revised to reflect the correct address for the Conyngham Borough EOC.

Schedule Of Corrective Actions: 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.

Issue No.: 63-00-1.d.1-P-07

Condition: The Conyngham Borough RERP lists RACES as providing back-up communication services when the organization is now known as ARES.

Possible Cause: Name change from RACES to ARES by the organization.

Reference: NUREG-0654, F.1. and F.2.; and Conyngham Borough RERP, Attachment C-4, page C-8.

Effect: As new members join the Conyngham Borough EOC, they will be expecting RACES to provide backup communication support. If ARES representatives show up, the EOC staff may not realize that they are the organization that will provide support communication and may deny admittance to the EOC.

Recommendation: Change the Conyngham Borough RERP to reflect the new name change.

Schedule Of Corrective Actions: 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.

Issue No.: 63-00-3.c.1-P-08

Condition: The Conyngham Borough RERP provides incorrect information regarding the number of residents who are hearing impaired and non-ambulatory. During the exercise, the EOC staff discovered twelve (12) individuals require assistance and acted accordingly.

Possible Cause: Conyngham Borough demographics have changed since the last up date to this section of the plan.

Reference: NUREG-0654, E.7., J.10.c., J.10.d., and J.10.g.; and Conyngham Borough RERP, Notification and Resources Manual, Sections E and G, page 7.

Effect: The current Conyngham Borough demographics indicate an increase of residents with hearing impairments or they are non-ambulatory. The number should be updated so that EOC staff can adequately provide A&N resources and acquire adequate transportation for special populations.

Recommendation: Change the Conyngham Borough EOP to reflect current demographics data.

Schedule Of Corrective Actions: 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.

Huntington Township/New Columbus East Borough EOC

Issue No.: 63-00-1.a.1-P-09

Condition: The Huntington Township/New Columbus East Borough EOC did not use effective procedures to alert, notify, and mobilize emergency personnel and provide for continuous 24-hour staffing of the Public Works and Resource Services Officer function.

Possible Cause: The plan and SOP contained conflicting information regarding the existence of a Public Works and Resource Services Officer position.

Reference: NUREG-0654, A.2.a. and A.4.

Effect: Because this position was not staffed, no one was charged with the responsibility for placing towing services and fuel supply agencies on standby, assisting the Police Officer in obtaining material for road access control purposes, and maintaining sanitation standards (i.e., water and sewage capabilities) (SOP, page H-8); the lack of adequate staff could potentially jeopardize the health and safety of the public.

Recommendation: Discrepancies between the plan and the SOP and within the SOP should be clarified regarding the EOC's emergency personnel requirements. The plan should identify two people to staff both shifts of the Public Works and Resource Services Officer function, or current responsibilities should be reassigned to other functional areas.

Schedule of Corrective Actions: 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.

Nescopeck Borough EOC

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.

Possible Cause: Plan revision oversight.

Reference: NUREG-0654, H. and Nescopeck Borough EOP, Section IV.F., page 2 and page A.4.2.

Effect: The omission of the second site could cause confusion and cause EOC staff to relocate to the wrong site.

Recommendation: The plan should be revised to list both relocation sites.

Schedule of Corrective Actions: 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.

Shickshinny Borough EOC

Issue No.: 63-00-1.b.1-P-11

Condition: The operating space used in the exercise for the Shickshinny EOC is different from the operating floor plan provided in Attachment A-4 of the EOC plan.

Possible Cause: EOC managers and staff believed that the new space configuration was more efficient than the floor plan provided in Attachment A-4 of the EOC plan.

Reference: NUREG-0654, N.1.a.

Effect: The EOC staff selectively use parts of the plan.

Recommendation: The floor plan in the EOC plan should be amended to reflect improvements in space utilization.

Schedule of Corrective Actions: 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.

Issue No.: 63-00-1.c.1-P-12

Condition: The Shickshinny plan identifies an emergency worker monitoring and decontamination facility different from the one posted on the facility board. The EOC staff was told that either facility could be used.

Wright Township Fire Hall was identified on the Shickshinny facility location board as the emergency worker monitoring and decontamination facility. During the Alert SAE, EOC staff was told to have their emergency workers to go to this facility after completing their shifts. After the GE, EOC staff was told that the designated emergency worker monitoring and decontamination facility was either the Wright Township or Plains Fire Hall. Only the Plains Fire Hall is identified in the plan (Attachment I 4, page I-18).

Possible Cause: The plan has not been properly tested.

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

Effect: Emergency workers may not know where to go for monitoring and decontamination.

Recommendation: The Shickshinny plan should be reviewed and an emergency worker monitoring and decontamination facility should be identified and agreed upon by all participating parties.

Schedule of Corrective Actions: 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.

Lycoming County - Monitoring/Decontamination Centers

Issue No.: 63-00-6.a.1-P-13

Condition: There is inconsistency between (and within) the plan and other documentation regarding the levels of contamination that require completion of a decontamination form and whether the forms are completed for all individuals monitored or only those with contamination above the action levels.

The Lycoming County EOP (Annex E, Appendix 4, paragraph 2G, change 2 [dated March 2000]) calls for completion of the "decontamination report" form for each individual with a reading of .5 mR/h or higher. The only monitoring/decontamination report form in the plan is presented in Attachment A to Appendix 4. A note on that form indicates that it is to be completed for each person monitored.

The form actually used by the monitoring teams during the exercise was a Decontamination Monitoring Report Form (PEMA-DMR-1); this

form, which is not mentioned in the County Plan, indicates that it will be completed for each individual with a reading of 0.05 mR/h or more above background. The form also has a red cover sheet which, in bold type, directs that it "must be completed for every monitored person."

Possible Cause: The inaccuracy may be a carryover from a previous version of the plan.

Reference: Lycoming County EOP (Annex E), Appendix 4, paragraph 2G, change 2 (dated March 2000) and Attachment A to Appendix 4.

Effect: Monitoring personnel were provided with Decontamination Monitoring Report Forms (PEMA-DMR-1). They knew they were to fill out a form for all personnel monitored, and used a form that was different than the one specified in the Lycoming County Plan. The form was used appropriately to record a person's contamination level (or lack of contamination), used to record decontamination efforts and results, and presented to the registration section of the mass care center. No adverse effects resulted from use of the form.

Recommendation: Lycoming County should revise its EOP to require use of the proper form. The plan should include specific guidance on when, and for whom, the form should be used. (A form indicating that monitoring has occurred is required by the mass care center registration section to admit evacuees to mass care.)

Schedule of Corrective Actions: 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.

Northumberland County Reception Center

Issue No.: 63-00-1.e.1-P-14

Condition: Appendix 3 to Annex E of the Northumberland EOP states that each evacuee reaching the reception center at the monitoring/decontamination/mass care (M/D/MC) center (at the Milton Area High School/Junior High School complex) will be given a strip map and that the strip maps are provided in Attachments C, D, and E. Appendix 3 of Annex E does not have Attachments C, D, and E. The staff of the reception center did not have strip maps to distribute to evacuees and stated that it has not been their practice to distribute strip maps.

Possible Cause: The strip maps were not available.

Reference: NUREG-0654, J.12.

Effect: Because the reception center is located at the M/D/MC center at the Milton Area High School/Junior High School complex,

evacuees do not need maps to get from the reception center to the M/D/MC center (located in the same building complex). Because this is the only M/D/MC center in Northumberland County, strip maps are not needed to identify when to open another reception center. Therefore, the absence of strip maps is unlikely to have an effect on the health and safety of evacuees.

Recommendations: The Plan should be revised to eliminate the requirement to give a strip map to each evacuee as long as the reception center is located at the M/D/MC center at the Milton Area High School/Junior High School complex and as long as it is the only M/D/MC center in Northumberland County.

Schedule of Corrective Actions: 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.

Northumberland County Monitoring/Decontamination Center

Issue No.: 63-00-6.a.1-P-15

Condition: The two monitoring teams were required to monitor only approximately 1/3 of the expected evacuees at the M/D/MC center at the Milton Area High School/Junior High School in 12 hours in accordance with the extent-of-play agreement. However, Attachment E to Appendix 4 of Annex E of the Northumberland County EOP provides for only three evacuee monitoring teams, one decontamination team, and one vehicle monitoring team. With only three evacuee monitoring teams and the demonstrated monitoring rates, only half of the capacity of the M/D/MC center could be monitored in 12 hours. Also, it would be difficult for one decontamination team to function effectively with separate decontamination areas for males and females.

Appendix 4 provides that background readings should be taken and that the threshold for decontamination is 0.5 mR/h, not 0.5 mR/h *above background*. It is unclear why background readings would be taken if they were not subtracted from survey meter readings to determine whether the threshold for decontamination is exceeded.

Possible Cause: Appendix 4 provides for too few evacuee monitoring teams to monitor the expected number of evacuees within 12 hours. A second evacuee decontamination team might be needed to effectively serve the separate male and female decontamination areas. Also, it is unclear whether the plan intended the threshold for decontamination to be 0.5 mR/h, rather than 0.5 mR/h above background.

Reference: NUREG-0654, J.10.h.

Effect: If sufficient teams are not available to monitor evacuees in a timely manner, some evacuees may leave the M/D/MC center

before being monitored, causing unnecessary radiological exposures. Not subtracting background from survey meter readings is contrary to health physics practice.

Recommendation: The County should increase the number of monitoring teams at the M/D/MC center in Northumberland County, and consider changing the threshold for decontamination from 0.5 mR/h to 0.5 mR/h above background.

Schedule of Corrective Actions: 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.

Schuylkill County Monitoring/Decontamination Center (Marian High)

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.

Possible Cause: There are not enough monitors and equipment assigned to the center for the number of evacuees and vehicles.

Reference: NUREG-0654, J.12.

Effect: Without a sufficient number of survey instruments and monitors at the site, the efficiency of operations will diminish exponentially.

Recommendation: The plan should be revised to designate more than one team for vehicle monitoring activities and another team for decontamination operations. The plan should also require a sufficient number of survey instruments with backups at the three centers.

Schedule of Corrective Actions: 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.

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.

Possible Cause: The County plan does not specify that the background readings should be taken with the survey instrument window open.

Reference: NUREG-0654, J.12.

Effect: The trigger level indicating contamination (0.5 mR/h above background) would be incorrect because the actual background reading for the area is around 0.1 mR/h, not 0.04 mR/h.

Recommendation: The Schuylkill County plan should be revised (page E-4-1, Sections 1.D and E) to state that background level readings will be determined with the beta-gamma shield open.

Schedule of Corrective Actions: 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.

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.

Possible Cause: The County plan does not provide detailed instructions for the decontamination of vehicles such as where the operation will occur, the need to minimize possible contamination of soil, etc.

Reference: NUREG-0654, J.12.

Effect: If the decontamination process isn't conducted on a paved blacktop terrain, the surrounding topsoil could become contaminated from the water runoff.

Recommendation: The County plan should provide more detailed instructions for the decontamination of vehicles (e.g., where the operation will occur, the need to minimize possible contamination of soil).

Schedule of Corrective Actions: 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.

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.

Possible Cause: The plan and diagram for the operations at the Marian High School do not provide sufficient detail.

Reference: NUREG-0654, J.12.

Effect: If the manager for the center is not readily available, the setup and operations of the facility will not be conducted efficiently. The diagrams for the facility are not detailed and do not describe the following: how to set up the decontamination operations, which locked room should be used to store contaminated articles, where to place warning signs, how to handle the separation of clean and contaminated persons (including those sent to the shower areas), etc.

Recommendation: The County plan and diagram for the operations at the Marian High School should be revised to provide more detail.

Schedule of Corrective Actions: 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.

Wyoming County Monitoring/Decontamination Center

Issue No.: 63-00-6.a.1-P-20

Condition: The number of monitoring teams at the monitoring/decontamination center was not sufficient to monitor all evacuees. The Wyoming County Plan specifies that nine monitoring teams are required to process a total of 2,237 evacuees during a 12-hour period. The time observed to monitor each individual was 4 minutes, which would necessitate a total of 15 teams to process the required number of people during a 12-hour period. This calculation allows for a 10-minute break each hour.

Possible Cause: The calculations conducted to determine the number of teams in the plan may have been made using a much faster monitoring time. However, the demonstration clearly indicates that 4 minutes is required to monitor each individual using the CD V-700 survey meters.

Reference: Wyoming County Plan, page E-4-21 and NUREG-0654, J.12.

Effect: The nine teams will not be able to process all the evacuees within the required amount of time.

Recommendation: The plan should be revised to require at least 15 teams to conduct monitoring and decontamination. The County Emergency Coordinator indicated that trained personnel were available to support such an increase.

Schedule of Corrective Actions: 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.

Columbia-Montour Area Vocation-Technical 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.

Possible Cause: The Columbia-Montour Area Vocation-Technical School plan and a letter sent to parents state: "In the event of an incident at the Susquehanna Steam Electric Station requiring evacuation of the EPZ, the Columbia-Montour Area Vocational-Technical School will retain those students who live inside the EPZ in the gymnasium until they can be picked up by their parents, guardians, or other authorized persons." The letter goes on to discuss students with their own transportation. These statements indicate that the safety and protection of all affected Vo-Tech students is the responsibility of the Vo-Tech School.

However, the Central Columbia School District RERP, dated October 2000, contains a letter signed by the Superintendent that states: "...All students who reside within the 10-mile radius from the Susquehanna Steam Electric Plant will be transferred to the elementary school building, where they should be picked up by their parents or guardians...This procedure will include students from the non-public schools and the Columbia-Montour Area Vocational Technical School." These statements indicate that the safety and protection of the Columbia County Vo-Tech students (who are administratively assigned to the Central Columbia School

District) are the responsibility of the Columbia County School District.

Reference: Columbia-Montour Area Vocational-Technical School RERP for Incidents at the Susquehanna Steam Electric Station, Appendix 2, page 11; Central Columbia School District Radiological Emergency Response Plan, October 2000, Appendix 3, p. 3-1, and Appendix 2, p. 2-1, Bus Evacuation Routes Description; NUREG-0654, J.10.d. and J.10.g.; VI. Notification Procedures, B; VII. Concept of Operations, B. Alert, 2.; Appendix 2, Page 11; Appendix 3, Page 12 and NUREG-0654, J.10.c. and J.10.d.

Effect: Parents would not know, based on current written information, where to pick up their children. They could report to the wrong location, increasing the levels of anxiety and creating traffic flow problems.

If inexperienced people are brought in to participate in the emergency response, the plans may not be sufficient to help them do their jobs.

Recommendation: Plans should be coordinated between the Vo-Tech School and all school districts from which their students come, and updated as necessary to ensure that the procedures do not conflict.

Schedule of Corrective Actions: 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.

West Side Vocational-Technical School

Issue No.: 63-00-3.c.2-P-22

Condition: The West Side Vo-Tech School plan in use at the school was dated October 27, 1997. There was no indication that the plan had been updated since that time. The Principal-C&I was very familiar with the plan and the actions necessary to ensure protection of affected students. She made note of the improvements needed to the plan as she went through it during the exercise. Some areas noted for improvement:

- Students who have their own transportation should not be given the option of prearranging a location outside of the EPZ (either at the reception center or some other location) with their parents. All students must be picked up either at WSAVTS or Dallas Middle School (the host school for all Northwest area schools). All references to students using their own transportation should be deleted or revised.
- The portion of the plan used by the Administrative Director to address media inquiries should contain additional detail.

- More details on the timing of implementation actions should be provided. For example, the student body should not be informed of the emergency at SSES or special actions necessary until close to the end of the normal school day; and the amount of time the affected students are retained at WSAVTS after the close of the school day before they are transported to Dallas Middle School should be specified; and the plan should state that off-campus students will be recalled to campus after the declaration of an SAE.
- The address, phone number, and a map to Dallas Middle School should be added to the letter to parents.

Possible Cause: The plan has not been updated to reflect the actual practices of the school personnel during an emergency.

Reference: NUREG-0654, J.10.c. and J.10.d.

Effect: Strict adherence to the plan could result in the school taking actions that would not be the safest for students who live inside the 10-mile EPZ of SSES.

Recommendation: School officials should perform a detailed review of the plan and make necessary modifications. The plan should be revised to include a method for documenting annual reviews of the plan.

Schedule of Corrective Actions: 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.

Wilkes-Barre Vocational-Technical 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.

Possible Cause: The plan requirements for annual review have not been followed.

Reference: Radiological Emergency Response Plan for the Wilkes-Barre Vocational-Technical School for Incidents at the Susquehanna Steam Electric Station, Section V.D., page 3.

Effect: Without a current copy (or any copy) of the plan, responsible personnel may not know what actions to take in a radiological emergency.

Recommendation: The plan should be updated, extraneous material should be removed, staff and faculty should receive additional training, and the school should ensure that the plan is distributed to all appropriate personnel and agencies and that it is updated on an annual basis.

Schedule of Corrective Actions: 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.

APPENDIX 6

ADDITIONAL PRIOR ISSUES

This appendix contains the description and status of ARCAs that were assessed during prior exercises at SSES. They were either assessed at jurisdictions or functional entities that were exempt from demonstration at this exercise, or for ingestion exposure pathway objectives, they were not scheduled for demonstration during this exercise.

PRIOR ISSUES AT FUNCTIONAL ENTITIES NOT SCHEDULED TO BE DEMONSTRATED

Columbia County EOC

Issue No. 63-95-14-A-13

Description: The Fishing Creek Radiological Officer requested information concerning interactions between KI and other thyroid medications. The County Radiological Officer read the information contained in the county plan, which did not address the specific question, and never resolved the Fishing Creek's Radiological Officer concern. (NUREG-0654, E.7., J.10.e., and J.10.f.)

Reason ARCA Unresolved: Fishing Creek Township was not scheduled for evaluation in the 2000 exercise.

Recommendation: Fishing Creek Township should be evaluated in the next SSES REP exercise.

Berwick Borough EOC

Issue No.: 63-97-3-A-05

Description: Some telephone communications by EOC staff were not written on message forms or logged. For example, no written record was kept of a telephone request to the county for 32 buses, and status boards were not kept up to date with key events. (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Reason ARCA Unresolved: Berwick Borough was not scheduled to participate in the 2000 exercise.

Recommendation: Berwick Borough should participate in the next SSES REP exercise.

Butler Township EOC

Issue No.: 63-97-05-A-17

Description: The Butler Township EOP (paragraph I.4.2a and Attachment I-5) states that 148 TLDs, 61 DRDs, 6 area kits, and

408 bottles of KI are to be pre-positioned in the EOC. However, only 137 TLDs, 61 DRDs, 0 area kits, and 380 bottles of KI were available. Although sufficient quantities were available for emergency workers, the Township EOC did not have sufficient quantities to meet all Category A and B needs. The Deputy EMC indicated that the missing quantities could have been issued previously to Category B facilities; however, records were not available. (NUREG-0654, K.3.a., K.3.b., and K.4.)

Reason ARCA Unresolved: Butler Township was not scheduled to participate in the 2000 exercise.

Recommendation: Butler Township should participate in the next SSES REP exercise.

Hunlock Township EOC

Issue No.: 63-97-05-A-21

Description: Route alerting and TCP personnel were given an inadequate exposure control briefing by the acting RO. The acting RO briefed workers to turn back when dosage levels were at 25 rem. However, the plan requires workers to seek authorization to exceed 5 rem. Further, emergency workers were not instructed to return their TLDs, DRDs, and Dosimetry-KI Report Forms to the RO at the EOC when finished with their assignments. Emergency workers were not provided with information concerning conditions for exceeding 25 rem, as outlined in the EOP, page I-17, when finished with assignments. Also, they were not instructed on the precautions or side effects of KI, as explained in the local EOP, page I-25. (NUREG-0654, K.3.a., K.3.b., and N.1.a.)

Reason ARCA Unresolved: Hunlock Township was not scheduled to participate in the 2000 exercise.

Recommendation: Hunlock Township should participate in the next SSES REP exercise.

Nanticoke City EOC

Issue No.: 63-97-05-A-23

Description: DRDs and chargers were not pre-distributed to Nanticoke EOC, as required by the extent-of-play agreement. As a result, DRDs were not distributed. (NUREG-0654, K.3.a. and N.1.a.)

Reason ARCA Unresolved: Nanticoke City was not scheduled to participate in the 2000 exercise.

Recommendation: Nanticoke City should participate in the next SSES REP exercise.

Nuangola Borough EOC

Issue No.: 63-97-05-A-25

Description: Nuangola Borough emergency workers did not receive an adequate briefing on the principles of radiological exposure control or the use of dosimetry and KI. Dosimetry was not properly issued to emergency workers nor were appropriate records kept. Workers were not adequately instructed on exposure limits and what action to take at various dose levels. (NUREG-0654, H.10., J.10.e., K.3.a., K.3.b., and K.4.)

Reason ARCA Unresolved: Nuangola Borough was not scheduled to participate in the 2000 exercise.

Recommendation: Nuangola Borough should participate in the next SSES REP exercise.

Sugarloaf Township EOC

Issue No.: 63-97-05-A-31

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.)

Reason ARCA Unresolved: Sugarloaf Township was not scheduled to participate in the 2000 exercise.

Recommendation: Sugarloaf Township should participate in the next SSES REP exercise.

Lackawanna County Monitoring/Decontamination/Mass Care Center (Dunmore High School)

Issue No.: 63-97-18-A-34

Description: The Dunmore monitoring and decontamination team did not monitor the thyroid of evacuees, as called for in the Lackawanna County RERP (Appendix 4, Annex E, Section 3, page E-4-3). The plan requires monitoring the thyroid of arriving evacuees with the shield closed just below the larynx. In addition, monitoring was performed too quickly and not in accordance with good radiological monitoring practices. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The Lackawanna County monitoring/decontamination center at Dunmore High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Lackawanna County monitoring/decontamination center at Dunmore High School should participate in the next SSES REP exercise.

Issue No.: 63-97-18-A-35

Description: The Lackawanna County monitoring/decontamination center at the Dunmore High School had only two teams. There were not enough emergency workers available to demonstrate the monitoring and decontamination activities as indicated in the County EOP, Appendix 4, Attachment E, page E-4-21, and defined in the extent-of-play agreement. (NUREG-0654, N.1.a.)

Reason ARCA Unresolved: The Lackawanna County monitoring/decontamination center at Dunmore High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Lackawanna County monitoring/decontamination center at Dunmore High School should participate in the next SSES REP exercise.

**Lycoming County Monitoring/Decontamination/Mass Care Center
(Montoursville High School)**

Issue No.: 63-97-18-A-36

Description: The time to monitor six consecutive evacuees and complete the Monitoring/ Decontamination Report Form was 36 minutes, resulting in a rate of 10 per hour per team. At this rate, the four teams could only monitor 480 evacuees in 12 hours, 420 short of the Center's stated capacity of 900. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The Lycoming County monitoring and decontamination center at Montoursville High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Lycoming County monitoring and decontamination center at Montoursville High School should participate in the next SSES REP exercise.

**Lycoming County Monitoring/Decontamination/Mass Care Center
(South Williamsport High School)**

Issue No.: 63-97-18-A-37

Description: The Lycoming County monitoring and decontamination center located at the South Williamsport High School had four teams available for monitoring activities. The County EOP, Appendix 4, Attachment E, page E-4-21, indicates that five teams

are needed for monitoring activities. Thus, the extent-of-play for monitoring activities was not followed. (NUREG-0654, N.1.a.)

Reason ARCA Unresolved: The Lycoming County monitoring and decontamination center at South Williamsport High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Lycoming County monitoring and decontamination center at South Williamsport High School should participate in the next SSES REP exercise.

**Schuylkill County Monitoring/Decontamination/Mass Care Center
(Tamaqua High School)**

Issue No.: 63-97-18-A-40

Description: The average monitoring time per individual was 5 minutes at the Tamaqua High School monitoring/decontamination center in Schuylkill County. With five teams present (and this was stated in the plan to be the number of evacuee monitoring teams that would be used), only 720 of the expected 1,200 individuals could be monitored within a 12-hour period. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The Schuylkill County monitoring and decontamination center at Tamaqua High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Schuylkill County monitoring and decontamination center at Tamaqua High School should participate in the next SSES REP exercise.

Issue No.: 63-97-18-A-41

Description: The extent-of-play agreement specifies that sufficient numbers of trained monitoring personnel would be present at the demonstration to fully staff the number of monitoring teams specified in applicable plans. Seven teams are specified in the County EOP, Appendix 4, Attachment E, page E-4-20. Only 10 trained monitoring personnel were present, which would have been enough for only five teams (monitor and recorder). (NUREG-0654, N.1.a.)

Reason ARCA Unresolved: The Schuylkill County monitoring and decontamination center at Tamaqua High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Schuylkill County monitoring and decontamination center at Tamaqua High School should participate in the next SSES REP exercise.

**Union County Monitoring/Decontamination/Mass Care Center
(Lewisburg Area High School)**

Issue No.: 63-97-18-A-42

Description: The personnel monitoring team at the Lewisburg High School did not demonstrate proper procedures: (a) they did not know the whole body decontamination action level of 0.5 mR/hr for the CD V-700 survey meter; and (b) they performed thyroid scans with the probe window open instead of closed, as required in the County EOP, Annex E, Appendix 4, Section 3, page E-4-3. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The Union County monitoring and decontamination center at Lewisburg High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Union County monitoring and decontamination center at Lewisburg High School should participate in the next SSES REP exercise.

Issue No.: 63-97-18-A-43

Description: Decontamination of contaminated vehicles would have been done in the area where contaminated vehicles were being isolated at the Lewisburg High School. This practice could lead to recontamination. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The Union County monitoring and decontamination center at Lewisburg High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Union County monitoring and decontamination center at Lewisburg High School should participate in the next SSES REP exercise.

Issue No.: 63-97-18-A-44

Description: Only one shower/locker area was available for decontaminating evacuees, instead of a different area for each sex. Because the facility's capacity is nearly 1,300, this could cause discomfort for those waiting to use the shower facilities. In addition, the monitoring of evacuees was performed on the school grounds, even during inclement weather. (NUREG-0654, J.12.)

Reason ARCA Unresolved: The Union County monitoring and decontamination center at Lewisburg High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Union County monitoring and decontamination center at Lewisburg High School should participate in the next SSES REP exercise.

**Union County Monitoring/Decontamination/Mass Care Center
(Mifflinburg Area High School)**

Issue No.: 63-97-18-A-45

Description: Only two monitoring teams were present at the Union County monitoring and decontamination center at the Mifflinburg Area High School. In accordance with the County EOP, Appendix 4, Attachment E, page E-4-21, six monitoring teams should be present. Thus, the extent-of-play agreement was not followed. (NUREG-0654, N.1.a.)

Reason ARCA Unresolved: The Union County monitoring and decontamination center at Mifflinburg Area High School was not scheduled to participate in the 2000 exercise.

Recommendation: The Union County monitoring and decontamination center at Mifflinburg Area High School should participate in the next SSES REP exercise.

PRIOR ISSUES FOR INGESTION EXPOSURE PATHWAY OBJECTIVES

Issue No.: SQX87-08R, Objective 24

Description: During the 1987 exercise, an issue was identified concerning the collection of water and agricultural samples. It was recommended that radiological exposure control training be provided to personnel who may be called upon to collect field samples. It was suggested that this training be ongoing and supplemented with written materials, such as procedures and checklists. (NUREG-0654, I.8. and J.11.)

Reason ARCA Unresolved: The Agricultural Sampling Team/Field Water Supply Teams did not participate in the exercise.

Recommendation: The Agricultural Sampling Team/Field Water Supply Teams should participate in the next scheduled ingestion exposure pathway exercise.

Issue No.: SQX87-09R, Objective 24

Description: Procedures should exist on sample collection, use of survey instruments, and radiological exposure control. (NUREG-0654, H.10., I.8., and J.11.)

Reason ARCA Unresolved: The Agricultural Sampling Teams/Field Water Supply Teams did not participate in the exercise.

Recommendation: The Agricultural Sampling Team/Field Water Supply Teams should participate in the next scheduled ingestion exposure pathway exercise.