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To Whom It May Concern:

Enclosed is the After Action Report/Improvement Plan for the Susquehanna Steam Electric Station (SSES) Plume Radiological Emergency Preparedness Exercise that was held on October 05, 2010.

There were no deficiencies identified during the exercise. Five Areas Requiring Corrective Action (ARCAs) were identified; two were immediately re-demonstrated successfully and two others were re-demonstrated successfully on October 21, 2010. Three ARCAs from a previous exercise were successfully re-demonstrated. Four new planning issues were identified and have been resolved.

Based on the results of the exercise, the offsite radiological emergency response plans and procedures for the Commonwealth of Pennsylvania, and the affected local jurisdictions, site-specific to the Susquehanna Steam Electric Station 10-Mile Emergency Planning Zone, were adequately demonstrated and there is reasonable assurance that the plans are adequate and can be implemented, as demonstrated in the exercise.

If you have any questions, please contact Barton Freeman at (215) 931-5567.

Sincerely,

A handwritten signature in black ink, appearing to read "McGuff", written over a horizontal line.

MaryAnn Tierney
Regional Administrator

Enclosure

AX45
HRR



Susquehanna Steam Electric Station

After Action Report/ Improvement Plan

Exercise Date - October 05, 2010

Radiological Emergency Preparedness (REP) Program



FEMA

Published December 14, 2010

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Susquehanna Steam Electric Station After Action Report/Improvement Plan

Published December 14, 2010

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EXECUTIVE SUMMARY

Introduction:

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

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

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

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

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

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

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

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

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

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

A REP exercise was conducted on October 5th and 6th, 2010 to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving Susquehanna Steam Electric Station (SSES). The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency.

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

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

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

NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;

FEMA Guidance Memoranda MS-1, "Medical Services," November 1986;

FEMA-REP-14, "Radiological Emergency Preparedness Exercise Manual," September 1991;

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

67 FR 20580, "FEMA Radiological Emergency Preparedness: Exercise Evaluation Methodology," April 25, 2002.

Section 1 of this report, entitled "Exercise Overview," presents the Exercise Planning Team and the Participating Organizations.

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

Section 3 of this report, entitled "Analysis of Capabilities," presents detailed information on the demonstration of applicable exercise evaluation areas at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains: (1) descriptions of all Deficiencies and Areas Requiring Corrective Action (ARCAs) assessed during this exercise, recommended corrective actions, and the State and local governments' schedule of corrective actions for each identified exercise issue and (2) descriptions of ARCAs assessed during previous exercises and resolved at this exercise, including the corrective action demonstrated, as well as ARCAs assessed during previous exercises and scheduled for demonstration at this exercise which remain unresolved.

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

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

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

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

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

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

EPZ Description:

The Susquehanna Steam Electric Station is located in northeastern Pennsylvania on the Susquehanna River in Salem Township, Luzerne County. The plant is owned and operated by Pennsylvania Power & Light Company (PPL). Two boiling water reactors generate an electrical output of 1,194 megawatts each. Unit 1 began commercial operation on June 8, 1983, and Unit 2 on February 12, 1985.

The site encompasses 2,566 acres and is divided into two parts. The principal portion, containing the major operating equipment and buildings, is located 3,000 feet west of the river. The other portion houses the water intake apparatus located near U.S. Route 11. Route 11 passes through the site in a north/south direction, providing both primary and secondary access to the plant. The plant occupies approximately 100 acres of the site. The coordinates are approximately 41° 5'30" north and 76° 8'55" west.

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

The immediate vicinity of the plant is rural, surrounded by farms and undeveloped land. A total of 78 sirens are used for notification of the public; the sirens were installed for coverage of the plume exposure pathway. The nearest population center is Shickshinny Borough (Luzerne County), with a population of 959, located about four miles north of the plant. The nearest population center with more than 20,000 people is the City of Hazleton, with a population of 23,329, located 13 miles to the southeast.

The Berwick Airfield in Salem Township, Luzerne County, serves private aircraft and lies approximately five miles west of the plant. The airfield presents low risk to the plant. The closest major airport is the Wilkes-Barre/Scranton Airport, located 28 miles northeast of the site.

The 10-mile EPZ contains an estimated population of 68,511 according to 2000 census data.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Susquehanna Steam Electric Station

Type of Exercise

Plume

Exercise Date

October 05, 2010

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Susquehanna Steam Electric Station exercise:

State Jurisdictions

Pennsylvania Bureau of Radiation Protection Activities
Pennsylvania Department of Agriculture
Pennsylvania Department of Corrections
Pennsylvania Department of Education
Pennsylvania Department of Environmental Protection
Pennsylvania Department of General Services
Pennsylvania Department of Health
Pennsylvania Department of Public Welfare
Pennsylvania Department of Revenue
Pennsylvania Department of Transportation
Pennsylvania Emergency Management Agency (PEMA)
Pennsylvania Fish and Boat Commission
Pennsylvania Office of Administration
Pennsylvania State Police
Public Utility Commission

Risk Jurisdictions

Columbia County Commissioners
Columbia County Emergency Management Agency
Columbia County, Berwick Borough Emergency Management Agency
Columbia County, Berwick Borough Fire Department

Columbia County, Berwick Borough Reliance Fire Company
Columbia County, North Centre Township
Columbia County, South Centre Township Fire Department
Columbia County, South Centre Township Police Department
Columbia County, Benton Area School District
Columbia County, Benton Area School District, Benton Area Middle/High School
Columbia County, Berwick Area School District
Columbia County, Berwick Area School District, Nescopeck Elementary School
Columbia County, Berwick Area School District, Salem Elementary School
Columbia County, Bloomsburg Area School District
Columbia County, Bloomsburg Area School District, Bloomsburg Area Middle School
Columbia County, Bloomsburg Area School District, Bloomsburg High School
Columbia County, Central Columbia School District
Columbia County, Central Columbia School District, Central Columbia Middle School
Columbia County, Columbia-Montour Area Vocational Technical School
Luzerne County Emergency Management Agency
Luzerne County Fire and Emergency Medical Services
Luzerne County Health/Medical Services
Luzerne County Public Information (External Affairs)
Luzerne County Public Works
Luzerne County Radiological Protection
Luzerne County Sheriff's Department
Luzerne County Transportation
Luzerne County, Conyngham Township
Luzerne County, Conyngham Township Pond Hill Ambulance Station 108
Luzerne County, Dorrance Township Board of Supervisors
Luzerne County, Dorrance Township Citizens Volunteers
Luzerne County, Dorrance Township Emergency Management Agency
Luzerne County, Dorrance Township Emergency Medical Services
Luzerne County, Dorrance Township Fire Rescue Services
Luzerne County, Hollenback Township Board of Supervisors
Luzerne County, Hollenback Township Emergency Management Agency

Luzerne County, Hollenback Township Public Works Department
Luzerne County, Hollenback Township Volunteer Fire/Emergency Medical Services
Luzerne County, Nanticoke City Citizen Volunteers
Luzerne County, Nanticoke City Fire Department
Luzerne County, Nanticoke City Police Department
Luzerne County, Slocum Township Board of Supervisors
Luzerne County, Slocum Township Fire and Ambulance Company
Luzerne County, Wright Township Volunteer Police Department
Luzerne County, Wright Township Volunteer Fire Department
Luzerne County, Crestwood School District
Luzerne County, Crestwood School District, Rice Elementary School
Luzerne County, Greater Nanticoke Area School District
Luzerne County, Greater Nanticoke School District, Greater Nanticoke Education Center
Luzerne County, Greater Nanticoke School District, KM Smith Elementary School
Luzerne County, Hazleton Area School District
Luzerne County, Hazleton Area School District, Valley Elementary School
Luzerne County, Northwest Area School District
Luzerne County, Northwest Area School District, Huntington Mills Elementary School
Luzerne County, West Side Area Vocational - Technical School
Luzerne County, Wilkes-Barre Area Vocational - Technical School

Support Jurisdictions

Lackawanna County 911
Lackawanna County Ambulance
Lackawanna County Emergency Management Agency
Lackawanna County Emergency Operations Center
Lackawanna County, Mayfield Borough Emergency Management Agency
Lackawanna County, Scranton Fire Department
Lycoming County 911 Center
Lycoming County Agricultural Department
Lycoming County Board of Commissioners
Lycoming County Conservation District

Lycoming County Department of Public Safety
Lycoming County Emergency Management Agency
Lycoming County Human Resources
Lycoming County Radiological Response Team
Lycoming County Radiological Team
Lycoming County Reception Center, Lycoming Mall
Lycoming County Sheriff
Montour County
Northumberland Borough Fire Department
Northumberland County Department of Public Safety
Northumberland County Emergency Management Agency
Schuylkill County Emergency Management Agency
Schuylkill County, Butler Township Fire Department
Schuylkill County, Rush Township Emergency Services
Schuylkill County, Tamaqua Fire Department
Union County Emergency Management Agency
Union County Maintenance Department
Union County, William Cameron Engine Company
Wyoming County Commissioners
Wyoming County Emergency Management Agency

Private Organizations

American Red Cross (ARC) Columbia County Chapter
American Red Cross (ARC) Lewisburg Chapter
American Red Cross (ARC) Murgas Chapter
American Red Cross (ARC) North Central Pennsylvania Chapter
American Red Cross (ARC) Schuylkill and Eastern Northumberland County Chapter
American Red Cross (ARC) Scranton Chapter
American Red Cross (ARC) Sunbury Area Chapter
American Red Cross (ARC) Union County Chapter
American Red Cross (ARC) Upper Northumberland County Chapter
American Red Cross (ARC) Wyoming County Chapter
American Red Cross (ARC) Wyoming Valley Chapter
Community Medical Center (CMC)

Datom Products Hazmat

Moses Taylor Hospital

Pennsylvania Power and Light (PPL)

Radio Amateur Civilian Emergency Services (RACES) Columbia-Montour

Radio Amateur Civilian Emergency Services (RACES) Endless Mountain Amateur
Radio Group

Radio Amateur Civilian Emergency Services (RACES) Lackawanna County

Radio Amateur Civilian Emergency Services (RACES) Murgas Amateur Radio
Club

Radio Amateur Civilian Emergency Services (RACES) Union County

Radio Amateur Civilian Emergency Services (RACES) Upper North Cumberland
Chapter

Federal Jurisdictions

Federal Emergency Management Agency

Nuclear Regulatory Commission

Environmental Protection Agency

USDA Food Agriculture Council (FAC)

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

On October 5, 2010, a full-scale plume exercise was conducted in the 10-mile plume exposure pathway, emergency planning zone (EPZ) around the Susquehanna Steam Electric Station (SSES) by the Federal Emergency Management Agency (FEMA), Region III. Out-of-sequence demonstrations were conducted on October 5 and 6, 2010. The purpose of the exercise and the out-of-sequence demonstrations was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise and out-of-sequence demonstrations were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The most recent prior full-scale exercise at this site was conducted on October 21, 2008.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Pennsylvania; its two risk counties (Columbia, Luzerne) and risk municipalities (Berwick Borough, Briar Creek Borough, North Center Township, South Center Township, Conyngham Township, Dorrance Township, Hollenback Township, Nanticoke City, and Slocum Township); and six support counties (Lackawanna, Lycoming, Montour, Northumberland, Union, and Wyoming) that were evaluated at this exercise.

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

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

- Reception Center: Conducted on October 6, 2010 between 1900 and 2130 hours in Lackawanna, Lycoming, Northumberland, Schuylkill, Union, and Wyoming Counties.
- Mass Care, Monitoring and Decontamination: Conducted on October 6, 2010 between 1900 and 2130 hours in Lackawanna, Lycoming, Northumberland, Schuylkill, Union, and Wyoming Counties.

- **Emergency Worker Monitoring and Decontamination:** Conducted on October 6, 2010 between 1900 and 2130 hours in Columbia, Luzerne County
- **Schools:** Conducted on October 5, 2010 between 0900 and 1100 hours in Columbia and Luzerne Counties.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies identified. Five Areas Requiring Corrective Action (ARCAs) were identified as a result of this exercise; two of the ARCAs were successfully re-demonstrated during the exercise and two other ARCAs were successfully redemonstrated on October 21, 2010. In addition, three ARCAs from a previous exercise were successfully demonstrated at this exercise. Four new planning issues were identified during the exercise. All were successfully resolved with plan changes submitted prior to the publication of this report. There were no planning issues carried forward from prior exercises.

2.2 Exercise Objectives, Capabilities and Activities

The objective of the SSES 2010 Plume Exercise is to demonstrate the capabilities of State and local emergency management agencies to mobilize emergency management and emergency response personnel, to activate emergency operations centers and support facilities, and to protect the health, lives, and property of the citizens residing within the 10 mile Emergency Planning Zone (EPZ).

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

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

resources to establish reception, monitoring and decontamination, and mass care centers was demonstrated.

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

2.3 Scenario Summary

NOTE: All information below is scenario simulated. The times for the events are approximate as the NRC licensee's operations crew on the reactor training simulator will be provided some allowance for free play.

There are two nuclear units at the Susquehanna Steam Electric Station (SSES), Pennsylvania. Both are Boiling Water Reactors, MARK 2 design. SSES Unit 1 will be participating in the exercise.

On October 5, 2010, SSES Unit 1 is operating at 100 percent power. The Unit has recently completed a refueling outage and has been at full power operation for 4 days. The routine condenser off gas release rate is higher than normally expected. The cause is traced to fuel clad failures in misplaced fuel bundles in the reactor core. This error occurred during the refueling outage. The routine release is from the Turbine Building roof top.

The weather is clear with light winds at 3 to 5 miles per hour (mph) from 45 degrees, the North East (NE) into the South West (SW). The stability class is D. These conditions are expected to remain unchanged into the night.

At 1530, the exercise begins in the Training Simulator Control Room. At 1535, the Training Simulator Control Room receives Hi-Hi condenser off gas alarms. This is verified by chemistry sampling as being just above the trigger level for an Unusual Event. At 1545, an Unusual Event is declared in accordance with emergency action level (EAL) MU7, "fuel cladding degradation". There is a non routine radioactive release in progress as a result of this event. Unit 1 continues to operate at 100 percent power.

At 1646, a fire protection system water line ruptures and floods the E diesel generator room. At 1700, an ALERT is declared by the Shift Manager in accordance with Emergency Action Level EAL-OA5, "Flooding in an area of the plant that results in degraded performance of safety systems". There is an ongoing non routine radioactive release. Unit 1 continues to operate at 100 percent power.

At 1745, the main steam line radiation monitor readings begin to rise rapidly owing to additional fuel clad failures in the misplaced fuel bundles. Direction is given to shut the reactor down immediately and close the main steam line isolation valves (MSIV). The reactor is successfully shut down. But, except for the inboard MSIV on the D main steam line, all other MSIV close. Also, the outboard MSIV on the D main steam line is not completely shut. This allows for the continued flow of highly radioactive steam to the condenser. This is confirmed by flow indicator readings and elevated radiation monitor readings on the D main steam line. At 1750, the non routine Turbine Building roof top radioactive release increases significantly owing to the increase in the level of radioactivity in the condenser off gas.

At 1750, there are indications that there is a moderate leak from the reactor coolant system into the drywell (primary reactor containment). The drywell radiation monitor readings are increasing. At 1845, as a result of the leak from the reactor coolant system, the drywell radiation monitor reading exceeds 3000 R/hr. At 1900, a Site Area Emergency is declared based on EAL FS1, "Loss of reactor coolant system barrier and potential loss or loss of fuel clad barrier". There is an ongoing non routine radiological release from the Turbine Building roof top. The wind direction is 45 degrees, the wind speed is 4 mph and the stability class is D.

At 2010, a drain line breaks in the condenser bay causing an additional release of radioactive gas to the environment through the Turbine Building filtration system. This causes another significant increase in the non routine release from the Turbine Building rooftop. At 2020, dose projections indicate that the EPA protective action guides (PAG) are exceeded off site.

At 2030, a General Emergency is declared based on EAL RG1, "Release rates exceed the General Emergency level". A Protective Action Recommendation is issued by SSES as "Evacuate 0-2 miles 360° and 2 to 10 miles in downwind sectors WSW, SW and SSW and, advise the general public in the evacuated area to administer KI in accordance with the state plan. Advise the remainder of the EPZ to monitor for EAS messages."

Subsequent dose projections by the Commonwealth of Pennsylvania will indicate that the EPA

protective action guides (PAG) are exceeded in the 0 to 1 mile distance from the SSES. By 2045 radiation releases will begin to decrease. However, the radioactive releases will continue until the end of the exercise. The wind direction remains at 45 degrees and the wind speed is 4 mph with stability class D.

At 2200 the SSES Evaluated Exercise will end if all objectives are met and, when announced by the Pennsylvania State Emergency Operations Center.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

Contained in this section are the results and findings of the evaluations of all jurisdictions and locations that participated in the October 5 and 6, 2010, biennial Radiological Emergency Preparedness (REP) Exercise.

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

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

3.2 Summary Results of Exercise Evaluation

The Susquehanna Steam Electric Station 2010 Plume Exercise evaluation included 73 participating locations, with 64 being Federally Evaluated and 9 participating and being observed. Fifty-nine evaluators provided analyses of 296 Exercise Criteria. These analyses resulted in a determination of 5 Areas Requiring Corrective Action (ARCA) of which 2 were successfully redemonstrated during the exercise; two others were successfully redemonstrated on October 21, 2010. In addition, 4 new Planning Issues were assessed. All Planning Issues were resolved. There were 3 ARCAs from the previous 2008 SSES Plume Exercise that were successfully demonstrated and resolved.

Table 3.1 - Summary of Exercise Evaluation (7 pages)

<p style="text-align: center;">DATE: 2010-10-05 SITE: Susquehanna Steam Electric Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated</p>		PA EOC	PA JIC	PA AAC SEOC-BRP	BRP SSES EOF	PA MOC, WB	BRP R3V	SFMT A SER	SFMT B SER	PA TACP SPBB	CoCo EOC	CoCo EWMDs CMVS
Emergency Operations Management												
Mobilization	1a1	N	N	N		M	N		N	M	M	
Facilities	1b1											
Direction and Control	1c1	N		N	N						M	
Communications Equipment	1d1	N			N	M	N	N	N	M	M	
Equip & Supplies to support operations	1e1	N	N	N	N	M	N	N	N	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1	N		N	N				N	M	M	
Radiological Assessment and PARs	2b1			N	N							
Decisions for the Plume Phase -PADs	2b2	N		N								
PADs for protection of special populations	2c1	N									M	
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1											
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1				N		N	N	N	M	M	M
Implementation of KI decision	3b1				N		N	N	N	M	M	
Implementation of protective actions for special populations - EOCs	3c1										M	
Implementation of protective actions for Schools	3c2										M	
Implementation of traffic and access control	3d1									M	M	
Impediments to evacuation are identified and resolved	3d2									M	M	
Implementation of ingestion pathway decisions - availability/use of info	3e1											
Materials for Ingestion Pathway PADs are available	3e2											
Implementation of relocation, re-entry, and return decisions.	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1						N	N	N			
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3						N	N	N			
Post plume phase field measurements and sampling	4b1											
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1	N									M	
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3										M	
Emergency information and instructions for the public and the media	5b1	N	N			M					M	
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1											M
Mon / decon of emergency worker equipment	6b1											M
Temporary care of evacuees	6c1											
Transportation and treatment of contaminated injured individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 2/7)

DATE: 2010-10-05 SITE: Susquehanna Steam Electric Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated			CoCo BrwkBr/BCBr EOC	CoCo BrwkBr/BCBr BuRA	CoCo NCrTwp EOC	CoCo NCrTwp BuRA	CoCo SCrTwp EOC	CoCo SCrTwp TACP	LzCo EOC	LzCo EWMDS WrtTwp VFD	LzCo CngmTwp EOC	LzCo CngmTwp BuRA	LzCo DmcTwp EOC
Emergency Operations Management													
Mobilization	1a1	M	M	M	M	M	M	M	M		M	M	M
Facilities	1b1												
Direction and Control	1c1	M		M		M			M		M	M	M
Communications Equipment	1d1	M	M	M	M	M	M	M	M		M	M	M
Equip & Supplies to support operations	1e1	M	M	M	M	M	M	M	M	M	M	M	M
Protective Action Decision Making													
Emergency Worker Exposure Control	2a1	M	M	M		M			M		M		M
Radiological Assessment and PARs	2b1												
Decisions for the Plume Phase -PADs	2b2												
PADs for protection of special populations	2c1								M				
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1												
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1												
Protective Action Implementation													
Implementation of emergency worker exposure control	3a1	M	M	M	M	A	M	M	M	M	M	M	M
Implementation of KI decision	3b1	M		M	M	M	M	M	M		M	M	M
Implementation of protective actions for special populations - EOCs	3c1			M		M			M		M		M
Implementation of protective actions for Schools	3c2	M		M		M			M		M		M
Implementation of traffic and access control	3d1	M		M		M	M	M	M		M		M
Impediments to evacuation are identified and resolved	3d2	M		M		M	M	M	M		M		M
Implementation of ingestion pathway decisions - availability/use of info	3e1												
Materials for Ingestion Pathway PADs are available	3e2												
Implementation of relocation, re-entry, and return decisions.	3f1												
Field Measurement and Analysis													
Adequate Equipment for Plume Phase Field Measurements	4a1												
Field Teams obtain sufficient information	4a2												
Field Teams Manage Sample Collection Appropriately	4a3												
Post plume phase field measurements and sampling	4b1												
Laboratory operations	4c1												
Emergency Notification and Public Info													
Activation of the prompt alert and notification system	5a1	M		M		M			M		M		M
Activation of the prompt alert and notification system - Fast Breaker	5a2												
Activation of the prompt alert and notification system - Exception areas	5a3	M	M	M	M				M		M		
Emergency information and instructions for the public and the media	5b1								M				
Support Operations/Facilities													
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1									M			
Mon / decon of emergency worker equipment	6b1									M			
Temporary care of evacuees	6c1												
Transportation and treatment of contaminated injured individuals	6d1												

Table 3.1 - Summary of Exercise Evaluation (Continued. page 3/7)

DATE: 2010-10-05 SITE: Susquehanna Steam Electric Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		LzCo HlnbkTwp EOC	LzCo NtekCty EOC	LzCo NtekCty TACP	LzCo SlcmTwp EOC	LC EOC (S)	LC RC BLC	LC MDC S/D YMCA	LC MCC DYMCA	LyCo EOC (S)	LyCo RC LyMI	LyCo MDC HHS
Emergency Operations Management												
Mobilization	1a1	M	M	M	M	M				M		
Facilities	1b1											
Direction and Control	1c1	M	M		M	M				M		
Communications Equipment	1d1	M	M	M	M	M				M		
Equip & Supplies to support operations	1e1	M	M	M	M	M	M	M	M	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1	M	M	M	M							
Radiological Assessment and PARs	2b1											
Decisions for the Plume Phase -PADs	2b2											
PADs for protection of special populations	2c1											
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1											
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1	M	M	M	M		M	M			M	M
Implementation of KI decision	3b1	M	M	M	M							
Implementation of protective actions for special populations - EOCs	3c1	M	M		M							
Implementation of protective actions for Schools	3c2	M	M		M							
Implementation of traffic and access control	3d1	M	M	M	M		M				M	
Impediments to evacuation are identified and resolved	3d2	M	M	M	M							
Implementation of ingestion pathway decisions - availability/use of info	3e1											
Materials for Ingestion Pathway PADs are available	3e2											
Implementation of relocation, re-entry, and return decisions.	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1											
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3											
Post plume phase field measurements and sampling	4b1											
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1	M	M		M							
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1					M				M		
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1							M	M			M
Mon / decon of emergency worker equipment	6b1											
Temporary care of evacuees	6c1								M			
Transportation and treatment of contaminated injured individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued. page 4/7)

DATE: 2010-10-05 SITE: Susquehanna Steam Electric Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		LyCo MCC HHS	MtCo EOC (S)	NC EOC (S)	NC RC SHS S	NC RC MDC SHS S	NC MCC SHS S	SeCo EOC (S)	SeCo RC MHS	SeCo MCC MHS	SeCo MDC MHS
Emergency Operations Management											
Mobilization	1a1		M	M				N			
Facilities	1b1										
Direction and Control	1c1		M	M				N			
Communications Equipment	1d1		M	M				N			
Equip & Supplies to support operations	1e1	M	M	M	M	M	M	N	M	M	M
Protective Action Decision Making											
Emergency Worker Exposure Control	2a1										
Radiological Assessment and PARs	2b1										
Decisions for the Plume Phase -PADs	2b2										
PADs for protection of special populations	2c1										
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1										
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1										
Protective Action Implementation											
Implementation of emergency worker exposure control	3a1				M	M			M		M
Implementation of KI decision	3b1										
Implementation of protective actions for special populations - EOCs	3c1										
Implementation of protective actions for Schools	3c2										
Implementation of traffic and access control	3d1				M				M		
Impediments to evacuation are identified and resolved	3d2										
Implementation of ingestion pathway decisions - availability/use of info	3e1										
Materials for Ingestion Pathway PADs are available	3e2										
Implementation of relocation, re-entry, and return decisions.	3f1										
Field Measurement and Analysis											
Adequate Equipment for Plume Phase Field Measurements	4a1										
Field Teams obtain sufficient information	4a2										
Field Teams Manage Sample Collection Appropriately	4a3										
Post plume phase field measurements and sampling	4b1										
Laboratory operations	4c1										
Emergency Notification and Public Info											
Activation of the prompt alert and notification system	5a1										
Activation of the prompt alert and notification system - Fast Breaker	5a2										
Activation of the prompt alert and notification system - Exception areas	5a3										
Emergency information and instructions for the public and the media	5b1		M	M				N			
Support Operations/Facilities											
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1	M				M	M			M	M
Mon / decon of emergency worker equipment	6b1										
Temporary care of evacuees	6c1	M					M			M	
Transportation and treatment of contaminated injured individuals	6d1										

Table 3.1 - Summary of Exercise Evaluation (Continued, page 6/7)

<p style="text-align: center;">DATE: 2010-10-05 SITE: Susquehanna Steam Electric Station, PA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated</p>			CoCo Brwk ASD	CoCo BrwkASD NscpkES	CoCo BrwkASD SES	CoCo Blmsbrg ASD	CoCo BASD BHS	CoCo Blmsbrg-ASD Blmsbrg AMS	CoCo CCSD	CoCo CCSD CCMS	CoCo CM AVTS	LzCo CSD
Emergency Operations Management												
Mobilization	1a1											
Facilities	1b1											
Direction and Control	1c1											
Communications Equipment	1d1											
Equip & Supplies to support operations	1e1											
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											
Radiological Assessment and PARs	2b1											
Decisions for the Plume Phase -PADs	2b2											
PADs for protection of special populations	2c1											
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1											
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1											
Implementation of KI decision	3b1											
Implementation of protective actions for special populations - EOCs	3c1											
Implementation of protective actions for Schools	3c2	M	M	M	M	M	M	M	M	M	M	M
Implementation of traffic and access control	3d1											
Impediments to evacuation are identified and resolved	3d2											
Implementation of ingestion pathway decisions - availability/use of info	3e1											
Materials for Ingestion Pathway PADs are available	3e2											
Implementation of relocation, re-entry, and return decisions.	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1											
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3											
Post plume phase field measurements and sampling	4b1											
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1											
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1											
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1											
Mon / decon of emergency worker equipment	6b1											

Table 3.1 - Summary of Exercise Evaluation (Continued, page 7/7)

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3.3 Criteria Evaluation Summaries

3.3.1 Pennsylvania Jurisdictions

3.3.1.1 Pennsylvania Emergency Operations Center

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

3.3.1.2 Pennsylvania Joint Information Center

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

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

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

3.3.1.4 Pennsylvania Bureau of Radiation Protection Activities, Susquehanna Steam Electric Station Emergency Operations Facility

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

3.3.1.5 Pennsylvania Media Operations Center, Wilkes-Barre

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

3.3.1.6 Pennsylvania Bureau of Radiation Protection, Radiological Rapid Response Vehicle

- a. MET: None
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: 1.a.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1, 4.a.3.
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.7 PA State Field Monitoring Team A, South East Region

- a. MET: None
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1, 4.a.3.
- f. PRIOR ISSUES - RESOLVED: None

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.8 PA State Field Monitoring Team B, South East Region

- a. MET: None
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: 1.a.1, 1.d.1, 1.e.1, 2.a.1, 3.a.1, 3.b.1, 4.a.1, 4.a.3.
- f. PRIOR ISSUES - RESOLVED: None
- g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.9 Pennsylvania State Traffic and Access Control Points, State Police Barracks Bloomsburg

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

3.3.2 Risk Jurisdictions

3.3.2.1 Columbia County Emergency Operations Center

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

ISSUE NO.: 63-10-3c2-P-01

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

CONDITION: The school populations referenced in Columbia County Emergency

Management Agency Radiological Emergency Response Plan were incorrect and the list of private and parochial schools with children who lived inside the 10-mile EPZ was incomplete.

POSSIBLE CAUSE: This data was not verified against the school plans.

REFERENCE: NUREG 0654 J10.c, d, g

Columbia County Emergency Management Agency Radiological Emergency Response Plan, Attachment A, Appendix 14

EFFECT: Incorrect population data could result in a lack of resources at the relocation schools or a lack of buses for evacuation for school districts. Incomplete lists of schools could cause inaccurate accountability of students and in a lack of notification to parents.

CORRECTIVE ACTION DEMONSTRATED: Columbia County submitted a change to the RERP that eliminated the population data from the table and refers the reader to the appropriate school district plan.

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

**3.3.2.2 Columbia County Emergency Worker Monitoring and Decontamination Station,
Columbia Montour Vo-Tech School**

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

3.3.2.3 Columbia County, Berwick Borough/Briar Creek Borough Emergency Operations Center

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

ISSUE NO.: 63-08-3b1-A-01

ISSUE: The Emergency Operations Center (EOC) received notification from the Columbia County EOC over the radio and telephone that Emergency Workers were to ingest potassium iodide (KI). However, these messages were not passed forward to the Emergency Management Coordinator.

CORRECTIVE ACTION DEMONSTRATED: At 2114 the combined Berwick Borough/Briar Creek Borough Emergency Operations Center (EOC) received Message Number 25 from the Columbia County EOC authorizing evacuation and the decision to take Potassium Iodide (KI). This message was immediately relayed to all staff members in the EOC and they used radios to instruct their field personnel to take their issued tablet (1) of KI. This action resolves previous issue 63-08-3b1-A-01.

ISSUE NO.: 63-08-3c2-A-02

ISSUE: The Emergency Medical Services Representative did not provide Fire/Rescue personnel with contact information for all hearing impaired individuals for their use in route alerting and failed to notify or address other special needs individuals.

CORRECTIVE ACTION DEMONSTRATED: During the SSES 2010 Plume exercise, the Berwick/Briar Creek Borough EOC Medical Services Representative demonstrated to the evaluator that the EOC maintained contact information in accordance with guidance in the 2009 Draft REPP Manual, Page II-47, for Special

Needs individuals including, but not limited to: sensory, motor-skills, mental/emotional disabilities; institutionalized settings; elderly, children, diverse cultures; limited or no English-speaking proficiency; transportation disadvantaged; in the EOC Resource Lists. This information was provided to Fire/Rescue personnel for use in route alerting. Actual notifications were simulated in accordance with the Extent of Play. This resolves issue number 63-08-3c2-A-02.

g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.4 Columbia County, Berwick Borough/Briar Creek Borough Back-up Route Alerting

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

ISSUE NO.: 63-08-5a3-A-03

ISSUE: The crew that demonstrated the Berwick Borough/Briar Creek Borough (BBC) backup alert route (Zone 1) ran the route simulating the use of the vehicle's siren, emergency lights and public address system. After completing the route, the crew was asked to demonstrate the vehicle's emergency notification equipment. The siren and emergency lights tests were satisfactory. However, the volume of the public address system was insufficient to provide adequate carrying power of the message. The volume was not much louder than ordinary conversation level. Several minutes were spent attempting to raise the volume without success. The crew was advised that if the volume could be raised, a re-demonstration could occur. Eventually, the BBC Emergency Management Director and the Fire/Rescue Officer were informed and agreed that the volume could not be improved.

CORRECTIVE ACTION DEMONSTRATED: Since the route alerting team demonstrated the ability to complete the hearing impaired, as well as back up route alerting, two years ago, in the prescribed time on less than 45 minutes this demonstration was simulated. During the exercise two years ago the public address system was deemed to be not loud enough and ARCA 63-08-5a3-A-03 was issued.

During this demonstration the evaluator was taken to an area where no one would be disturbed and the Public Address System was demonstrated. The evaluator stood approximately 100 yards from the vehicle and could clearly hear the drill message, thus resolving this issue.

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.5 Columbia County, North Centre Township Emergency Operations Center

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

3.3.2.6 Columbia County, North Centre Township Back-up Route Alerting

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

3.3.2.7 Columbia County, South Centre Township Emergency Operations Center

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

ISSUE NO.: 63-10-3a1-A-01

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

CONDITION: Emergency workers at the South Centre Township EOC and South Centre Township Traffic and Access Control Points did not read their dosimetry every 30 minutes or record exposure information during the exercise.

POSSIBLE CAUSE: The radiological briefing did not emphasize the importance of periodic reading of dosimetry and no recording form was issued. Although the plans/procedures refer to recording and reporting exposure, they do not specify particular forms or methods.

REFERENCE: NUREG-0654, K.3.a, b

South Centre Township, Columbia County, Radiological Emergency Response Plan, Attachment I "Radiological Protection Services Officer (Operations) Standard Operating Procedures"

EFFECT: Emergency workers and traffic control officers could have received radiological exposure in excess of the approved limits.

RECOMMENDATION: South Centre Township should institute a system for ensuring that EW exposure is monitored throughout an incident, including periodic reminders to read dosimetry and provide an exposure recording form for recording the readings.

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

3.3.2.8 Columbia County, South Centre Township Traffic and Access Control

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

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

3.3.2.9 Luzerne County Emergency Operations Center

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

3.3.2.10 Luzerne County Emergency Worker Monitoring and Decontamination Station, Wright Township Volunteer Fire Department

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

ISSUE NO.: 63-10-3a1-A-02

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

CONDITION: A radiological briefing was not conducted for the Wright Township Fire Department monitoring and decontamination personnel.

POSSIBLE CAUSE: The Wright Township Fire Department (FD), Radiological Emergency Worker Decontamination Station Procedure requires the Radiological Officer to distribute Personal Record Dosimeters (PRD), Dosimetry/KI Report Forms and survey equipment and perform a radiological briefing. Wright Township FD personnel indicated that they were not required to conduct a radiological briefing because the emergency workers at that facility were classified as Category C and were issued only a PRD.

REFERENCE: NUREG-0654, K.3.a and K.5.a

Wright Township Fire Department, Radiological Emergency Worker
Decontamination Station Procedure, Section V.B.3, September 2010

EFFECT: A radiological briefing should be conducted to ensure that all workers understand the use of their dosimetry, report forms and use of instrumentation. It should also address monitoring techniques and protocols for managing contaminated individuals, vehicles and equipment. If the briefing is not conducted, less experienced workers may not source check radiological survey instruments properly, monitor correctly or direct decontamination activities effectively.

CORRECTIVE ACTION DEMONSTRATED: During a redemonstration drill on October 21, 2010, the Wright Township Emergency Worker Monitoring and Decontamination Station Incident Commander successfully demonstrated a Radiological Briefing for Pennsylvania Category "C" Emergency Workers. The IC also provided each Emergency Worker with a briefing card that includes the Dosimetry Distribution information, data on Potassium Iodide, Dosimetry Reading, and Exposure Limits as well as instructions on what workers should do upon completion of mission. After the briefing, two emergency workers demonstrated their knowledge and familiarity with exposure control procedures by answering questions and referring to the Radiological Information cards.

ISSUE NO.: 63-10-6a1-A-05

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

CONDITION: A thyroid scan was not conducted on a simulated State Police officer who was monitored with a portal monitor and found to be clean (not contaminated).

POSSIBLE CAUSE: The Wright Township Fire Department (FD) facility had an outdated flow chart set up that did not include the step to perform a thyroid scan. Additionally, radiological workers at the FD indicated that they understood the procedure to require a thyroid scan of individuals who were contaminated, but not individuals who were non-contaminated. The Wright Township Fire Department (FD), Radiological Emergency Worker Decontamination Station Procedure states, "Perform thyroid monitoring on non-contaminated or decontaminated Emergency Workers who were exposed or potentially exposed to the plume in accordance with Section 4." Section 4 provides instruction on how to conduct a thyroid scan. It was noted that Appendix 3, Annex A, Tab 2, Attachment A flow chart contained a thyroid monitoring decision block that was not fully understood by the FD staff.

REFERENCE: NUREG-0654, K.3.a and K.5.a;

Wright Township Fire Department, Radiological Emergency Worker Decontamination Station Procedure, Attachment A, Section B.3 and Attachment A flowchart, September 2010

EFFECT: Emergency Workers who have been in the plume could have absorbed enough radioactive iodine in their thyroid to warrant follow up evaluation even if they were below the contamination screening requirement for external contamination using a portal monitor.

CORRECTIVE ACTION DEMONSTRATED: A Pennsylvania Emergency Management Agency (PEMA) representative called a "time out" and conducted training on the requirement to conduct a thyroid scan on emergency workers who were exposed or potentially exposed to the plume. The Wright Township FD emergency worker appropriately redemonstrated performing a thyroid scan on the non-contaminated emergency worker.

- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None

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

3.3.2.11 Luzerne County, Conyngham Township Emergency Operations Center

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

ISSUE NO.: 63-10-3b1-A-04

CRITERION: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the admin of KI for emergency workers and institutionalized individuals (not general public) is maintained. (NUREG-0654, E.7., J.10.e.f.)

CONDITION: The Conyngham Township Emergency Operations Center (EOC) staff and emergency field workers did not simulate the ingestion of Potassium Iodide (KI) when directed by the proper authority in the Luzerne County EOC.

POSSIBLE CAUSE: The message announcing a General Emergency and directing the administration of KI was misinterpreted by the Township's EOC staff to wait until further direction and approval from the Pennsylvania Secretary of Public Health, through proper channels, rather than immediately administering KI as intended. This interpretation is different from expectations contained in the Township's Radiological Emergency Response Plan and Standard Operation Procedures.

REFERENCE: NUREG-0654/FEMA REP-1, J.10.e; Conyngham Township Radiological Emergency Response Plan, Attachment I-3 page 13 of 16; and Conyngham Township Standard Operating Procedure-B page 3 of 7

EFFECT: Emergency workers may have received higher internal radiological dose than if they had simulated ingested KI when directed.

CORRECTIVE ACTION DEMONSTRATED: Conyngham Township EOC successfully re-demonstrated this criterion on October 7, 2010 by receiving a General Emergency message from Luzerne County EOC and announcing the decision to

administer Potassium Iodide Emergency Workers and the General Public (KI) to the EOC Staff. The EOC manager then simulated directing the communications officer to notify all deployed Emergency Workers to take KI in accordance with their Radiological Briefing.

ISSUE NO.: 63-10-5a3-A-03

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

CONDITION: The criterion requires that back-up route alerting be completed within 45 minutes. Conyngham Township EOC did not adequately demonstrate back-up route alerting.

POSSIBLE CAUSE: The Conyngham Township EOC had not planned to provide an actual demonstration of back-up route alerting through Sector 2 because fire personnel, who normally conduct this function with their fire equipment, were not scheduled to participate in the exercise.

REFERENCE: NUREG-0654, E.6
FEMA-REP-1, Appendix 3.B.2.c

EFFECT: The back-up route alerting process due to a siren failure would not have provided residents of Sector 2 with information about an emergency situation within the prescribed time.

CORRECTIVE ACTION DEMONSTRATED: Conyngham Township Emergency Management in coordination with SSES Off-site Emergency Planning revised and edited the RERP by redefining the boundaries of the Route Alert Sectors. There are now 4 sectors.

In a redemonstration route alert drill on October 21, 2010, Conyngham Township Volunteer Fire Department successfully completed route in Sector #2 (Pond Hill) in 40 minutes driving at a reasonable speed to facilitate notification of the residents in the Sector.

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

3.3.2.12 Luzerne County, Conyngham Township Back-up Route Alerting

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

3.3.2.13 Luzerne County, Dorrance Township Emergency Operations Center

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

3.3.2.14 Luzerne County, Hollenback Township Emergency Operations Center

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

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

3.3.2.15 Luzerne County, Nanticoke City Emergency Operations Center

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

3.3.2.16 Luzerne County, Nanticoke City Traffic and Access Control

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

3.3.2.17 Luzerne County, Slocum Township Emergency Operations Center

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

3.3.3 Support Jurisdictions

3.3.3.1 Lackawanna County Emergency Operations Center

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

3.3.3.2 Lackawanna County Reception Center, Big Lots Center

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

3.3.3.3 Lackawanna County Monitoring and Decontamination Center, Scranton/Dunmore YMCA

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

3.3.3.4 Lackawanna County Mass Care Center, Dunmore YMCA

- a. MET: 1.e.1, 6.a.1, 6.c.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: None

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

3.3.3.5 Lycoming County Emergency Operations Center

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

3.3.3.6 Lycoming County Reception Center, Lycoming Mall

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

3.3.3.7 Lycoming County Monitoring and Decontamination Center, Hughesville High School

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

3.3.3.8 Lycoming County Mass Care Center, Hughesville High School

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

3.3.3.9 Montour County Emergency Operations Center

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

ISSUE NO.: 63-10-5b1-P-02

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

CONDITION: The power plant named in the Montour County pre-scripted press releases is incorrect.

POSSIBLE CAUSE: The error was not identified during the last plan review.

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

Montour County Emergency Management Agency (Nuclear/Radiological Incident Plan) Appendix 3, Attachment A, paragraphs 1 and 2

EFFECT: Press releases could result in media or public misunderstanding.

CORRECTIVE ACTION DEMONSTRATED: Montour County Emergency Management provided a copy of the page change to the pre-scripted media release that corrected the name of the utility. Copies of the changed page have been

disseminated to all holders of the plan.

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

3.3.3.10 Northumberland County Emergency Operations Center

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

3.3.3.11 Northumberland County Reception Center, Shikellemy High School, Sunbury

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

3.3.3.12 Northumberland County Monitoring and Decontamination Center, Shikellemy High School - Sunbury

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

ISSUE NO.: 63-06-6a1-A-04

ISSUE: No "Range of Readings" sticker was affixed to the side of the survey

instrument indicating acceptance criterion for a source check.

CORRECTIVE ACTION DEMONSTRATED: A range of readings was affixed to each hand-held survey meter. Operational checks were performed and compared to the readings on the labels.

ISSUE NO.: 63-06-6a1-A-05

ISSUE: Contrary to the Extent of Play, the same player demonstrated all 3 monitoring tasks at the facility: portal monitor, survey meter monitoring of the contaminate individual, and vehicle monitoring. In an actual event one person would not be able to perform required tasks simultaneously.

CORRECTIVE ACTION DEMONSTRATED: Six trained monitoring personnel were at the facility. Five demonstrated radiological monitoring, each at a separate monitoring station.

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

3.3.3.13 Northumberland County Mass Care Center, Shikellemy High School - Sunbury

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

3.3.3.14 Schuylkill County Emergency Operations Center

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

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

3.3.3.15 Schuylkill County Reception Center, Marian High School

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

3.3.3.16 Schuylkill County Mass Care Center, Marian High School

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

3.3.3.17 Schuylkill County Monitoring and Decontamination Center, Marian High School

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

3.3.3.18 Union County Emergency Operations Center

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

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

3.3.3.19 Union County Reception Center, Montandon Elementary School

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

3.3.3.20 Union County Monitoring and Decontamination Center, Lewisburg Area High School

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

3.3.3.21 Union County Mass Care Center, Lewisburg Area High School

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

3.3.3.22 Wyoming County Emergency Operations Center

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

3.3.3.23 Wyoming County Reception Center, Tunkahannock Middle School

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

3.3.3.24 Wyoming County Monitoring and Decontamination Center, Tunkahannock Middle School

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

3.3.3.25 Wyoming County Mass Care Center, Tunkahannock Middle School

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

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.26 Columbia County, Benton Area School District

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

3.3.3.27 Columbia County, Benton Area School District, Benton Area Middle/High School

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

3.3.3.28 Columbia County, Berwick Area School District

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

3.3.3.29 Columbia County, Berwick Area School District, Nescopeck Elementary School

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

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

3.3.3.30 Columbia County, Berwick Area School District, Salem Elementary School

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

ISSUE NO.: 63-10-3c2-P-04

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

CONDITION: The Berwick Area School District and the Columbia County plans identify different host schools for Salem Elementary School.

POSSIBLE CAUSE: The inconsistency was not identified during the last review and update of the plans.

REFERENCE: NUREG-0654 J.10.g.j.

Radiological Emergency Response Plan for the Berwick Area School District for Incidents at the Susquehanna Steam Electric Station (August 9, 2010), page 10

Columbia County Radiological Emergency Response Plan to Nuclear Power Plant Incidents (March 2010), page 8

EFFECT: The public and students' parents could be confused about where the students were evacuated.

CORRECTIVE ACTION DEMONSTRATED: The discrepancy was in the Columbia County Radiological Emergency Response Plan. The Berwick Area School District plan correctly identifies Liberty Elementary School as the host school. A change to the Columbia County RERP resolved this planning issue.

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

3.3.3.31 Columbia County, Bloomsburg Area School District

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

3.3.3.32 Columbia County, Bloomsburg Area School District, Bloomsburg High School

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

3.3.3.33 Columbia County, Bloomsburg Area School District, Bloomsburg Area Middle School

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

3.3.3.34 Columbia County, Central Columbia School District

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

3.3.3.35 Columbia County, Central Columbia School District, Central Columbia Middle School

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

3.3.3.36 Columbia County, Columbia-Montour Area Vocational Technical School

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

3.3.3.37 Luzerne County, Crestwood School District

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

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.38 Luzerne County, Crestwood School District, Rice Elementary School

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

3.3.3.39 Luzerne County, Greater Nanticoke Area School District

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

3.3.3.40 Luzerne County, Greater Nanticoke Area School District, K.M. Smith Elementary School

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

3.3.3.41 Luzerne County, Greater Nanticoke Area School District, Greater Nanticoke Education Center

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

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

3.3.3.42 Luzerne County, Hazleton Area School District

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

3.3.3.43 Luzerne County, Hazelton Area School District, Valley Elementary School

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

3.3.3.44 Luzerne County, Northwest Area School District

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

ISSUE NO.: 63-10-3c2-P-03

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

CONDITION: The Northwest Area School District Plan is not current.

POSSIBLE CAUSE: Garrison Memorial Elementary was closed and other schools were renamed, consolidated, and reconfigured. The plan was not updated with the correct information.

REFERENCE: NUREG 0654 Section P.4

Northwest Area School District Plan Radiological Emergency Response Plan

EFFECT: Inaccurate information may be released and students' parents could go to the wrong locations to pick up children after an evacuation.

CORRECTIVE ACTION DEMONSTRATED: Northwest Area School District provided an update and revision of the Radiological Response Plan that corrects the erroneous information.

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

3.3.3.45 Luzerne County, Northwest Area School District, Huntington Mills Elementary School

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

3.3.3.46 Luzerne County, West Side Area Vocational - Technical School

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

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

3.3.3.47 Luzerne County, Wilkes-Barre Area Vocational - Technical School

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

SECTION 4: CONCLUSION

As stated before, the State and local emergency management organizations displayed a knowledge of their emergency plans and procedures and adequately implemented them, thereby demonstrating reasonable assurance that those agencies can respond and protect the health, lives and property of the residents of the SSES Emergency Planning Zone.

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 63-10-3a1-A-01		Criterion: 3a1
ISSUE: Emergency workers at the South Centre Township EOC and South Centre Township Traffic and Access Control Points did not read their dosimetry every 30 minutes or record exposure information during the exercise.		
RECOMMENDATION: South Centre Township should institute a system for ensuring that EW exposure is monitored throughout an incident, including periodic reminders to read dosimetry and provide an exposure recording form for recording the readings.		
CORRECTIVE ACTION DESCRIPTION: After discussion with county and utility leaders and after careful consideration concerning the matter, the Commonwealth of Pennsylvania believes that the root cause of the matter rests either in a failure of education of the Radiological Officers and field personnel or a failure of the Radiological Officers and field personnel to follow the procedures given. The first priority would be to strengthen training to emphasis the need to do 30 minute dosimetry readings once the equipment is issued. Secondary priority would be a training emphasis for the EOC Radiological Officer to be more cognizant of the need for 30 minute dosimetry checks and to consider methods they could utilize to remind personnel at the appropriate times such as the use of timers/alarms.		
CAPABILITY: Weapons of Mass Destruction (WMD) and Hazardous Materials (HazMat) Response and Decontamination	PRIMARY RESPONSIBLE AGENCY: Pennsylvania Emergency Management Agency	
CAPABILITY ELEMENT: Training	START DATE: 2011-01-01	
AGENCY POC: Laurin Fleming 717-651-2119	ESTIMATED COMPLETION DATE: 2012-10-01	

APPENDIX B: EXERCISE TIMELINE

The tables on the following pages present the times at which key events and activities occurred during the SSES exercise on October 5, 2010. Also included are times notifications were made to the participating jurisdictions and functional entities.

Table 1 - Exercise Timeline
DATE: 2010-10-05, SITE: Susquehanna Steam Electric Station, PA

Emergency Classification Level or Event	Time Utility Declared	PA EOC	PA AAC SEOC-BRP	BRP SSES EOP	PA MOC, WB	CoCo EOC	CoCo Brw/Bt/BCBr EOC
Unusual Event	1630	N/A	1643	N/A	1640	1637	1651
Alert	1725	1744	1744	N/A	1735	1734	1745
Site Area Emergency	1832	1850	1847	1832	1838	1845	1851
General Emergency	2026	2043	2032	2026	2030	2033	2045
Simulated Rad. Release Started	1630	1647	1643	1728	1644	1637	1642
Simulated Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1749	1749	1826	1813	1800	1826
Governor's Declaration of State of Emergency		1905	1905	1919	1955	1916	2011
Local Declaration of State of Emergency		N/A	N/A	N/A	1854	1837	1840
Exercise Terminated		2202	2158	2155	2155	2204	2147
Precautionary Actions: Restrict Airspace		1905	1905	1956	1916	1916	1909
Restrict Rail Traffic		1905	1905	1956	N/A	1916	1909
Restrict Water Traffic		1902	1905	1956	N/A	1916	1909
Shelter livestock, place on stored feed		1902	1905	1956	N/A	1925	1909
1st A & N Decision		1905	1905	N/A	1907	1907	1915
Stay tuned to EAS radio stations		N/A	N/A	N/A	N/A	N/A	N/A
1st Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A
1st EAS Message		N/A	N/A	N/A	N/A	N/A	N/A
2nd A & N Decision		2100	2101	N/A	N/A	2105	N/A
Evacuate 360 degrees to 10 miles		2100	2101	N/A	N/A	2105	N/A
2nd Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A
2nd EAS Message		N/A	N/A	N/A	N/A	N/A	N/A
KI Administration Decision: Emergency Workers		2100	2101	2145	2117	2105	2114
KI Administration Decision: General Public		2100	2101	2145	2117	2105	2114
KI Administration Decision: EWs and General Public advised NOT to take KI		N/A	N/A	N/A	N/A	N/A	N/A

Table 1 - Exercise Timeline
DATE: 2010-10-05, SITE: Susquehanna Steam Electric Station, PA

Emergency Classification Level or Event	Time Utility Declared	CoCo NCrtTwp EOC	CoCo SCrtTwp EOC	LzCo EOC	LzCo CnghtmTwp EOC	LzCo DmcTwp EOC	LzCo HlnbkTwp EOC
Unusual Event	1630	1649	1715	1637	1648	N/A	1650
Alert	1725	1743	1755	1732	1745	1741	1741
Site Area Emergency	1832	1847	1848	1841	1845	1845	1848
General Emergency	2026	2041	2042	2034	2042	2041	2042
Simulated Rad. Release Started	1630	1757	1732	1637	1648	1750	1650
Simulated Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1725	1730	1751	1820	1823	1748
Governor's Declaration of State of Emergency		1915	1918	1908	N/A	2003	2004
Local Declaration of State of Emergency		1909	1840	N/A	N/A	N/A	N/A
Exercise Terminated		2130	2150	2204	2205	2205	2145
Precautionary Actions: Restrict Airspace		1917	1920	1910	N/A	N/A	N/A
Restrict Rail Traffic		1917	N/A	1910	N/A	N/A	N/A
Restrict Water Traffic		1917	N/A	1908	N/A	N/A	N/A
Shelter livestock, place on stored feed		1939	1856	1906	1922	1920	2145
1st A & N Decision		1918	1918	1905	2108	1918	1918
Stay tuned to EAS radio stations		N/A	N/A	N/A	N/A	N/A	N/A
1st Siren Activation		N/A	N/A	1915	N/A	N/A	N/A
1st EAS Message		N/A	N/A	1918	N/A	N/A	N/A
2nd A & N Decision		2111	N/A	2105	N/A	2108	2110
Evacuate 360 degrees to 10 miles		2111	N/A	2105	N/A	N/A	N/A
2nd Siren Activation		N/A	N/A	2110	N/A	N/A	N/A
2nd EAS Message		N/A	N/A	2115	N/A	N/A	N/A
KI Administration Decision: Emergency Workers		2111	2114	2118	N/A	2108	2110
KI Administration Decision: General Public		2111	2114	2102	N/A	2108	2110
KI Administration Decision: EWs and General Public advised NOT to take KI		N/A	N/A	N/A	N/A	N/A	N/A

Table 1 - Exercise Timeline
DATE: 2010-10-05, SITE: Susquehanna Steam Electric Station, PA

Emergency Classification Level or Event	Time Utility Declared	LzCo NtekChy EOC	LzCo StemTwp EOC	LC EOC (\$)	LyCo EOC (\$)	NC EOC (\$)	UC EOC (\$)
Unusual Event	1630	1646	N/A	1658	1659	1658	1647
Alert	1725	1747	1638	1748	1747	1759	1754
Site Area Emergency	1832	1849	1748	1849	1856	1850	1857
General Emergency	2026	2042	2042	2048	2047	2047	2049
Simulated Rad. Release Started	1630	1646	1638	1638	1659	1730	1647
Simulated Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1800	1709	1800	1858	1728	1823
Governor's Declaration of State of Emergency		2002	2004	1937	1922	1929	1924
Local Declaration of State of Emergency		N/A	N/A	N/A	1925	1936	1935
Exercise Terminated		2140	2123	2159	2120	2234	2150
Precautionary Actions: Restrict Airspace		N/A	N/A	N/A	1932	2004	N/A
Restrict Rail Traffic		N/A	N/A	N/A	1932	2004	N/A
Restrict Water Traffic		N/A	N/A	N/A	1932	2004	N/A
Shelter livestock, place on stored feed		1920	1920	1910	1905	1917	1930
1st A & N Decision		1911	1905	N/A	1922	1922	N/A
Stay tuned to EAS radio stations		N/A	N/A	N/A	N/A	N/A	N/A
1st Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A
1st EAS Message		N/A	N/A	N/A	N/A	N/A	N/A
2nd A & N Decision		2109	2109	2105	2105	2105	2105
Evacuate 360 degrees to 10 miles		N/A	N/A	N/A	N/A	N/A	N/A
2nd Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A
2nd EAS Message		N/A	N/A	N/A	N/A	N/A	N/A
KI Administration Decision: Emergency Workers		2109	2109	2105	2105	2105	2105
KI Administration Decision: General Public		2109	2109	2105	2105	2105	2105
KI Administration Decision: EWs and General Public advised NOT to take KI		N/A	N/A	N/A	N/A	N/A	N/A

Table 1 - Exercise Timeline
DATE: 2010-10-05, SITE: Susquehanna Steam
Electric Station, PA

Emergency Classification Level or Event	Time Utility Declared	WyCo EOC (S)
Unusual Event	1630	1647
Alert	1725	1754
Site Area Emergency	1832	1858
General Emergency	2026	2043
Simulated Rad. Release Started	1630	1647
Simulated Rad. Release Terminated	N/A	N/A
Facility Declared Operational		1815
Governor's Declaration of State of Emergency		1915
Local Declaration of State of Emergency		N/A
Exercise Terminated		2200
Precautionary Actions: Restrict Airspace		1925
Restrict Rail Traffic		N/A
Restrict Water Traffic		N/A
Shelter livestock, place on stored feed		1938
1st A & N Decision		N/A
Stay tuned to EAS radio stations		N/A
1st Siren Activation		N/A
1st EAS Message		N/A
2nd A & N Decision		2105
Evacuate 360 degrees to 10 miles		N/A
2nd Siren Activation		N/A
2nd EAS Message		N/A
KI Administration Decision: Emergency Workers		2105
KI Administration Decision: General Public		2105
KI Administration Decision: EWs and General Public advised NOT to take KI		N/A

APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

The following is the list of Evaluators and Team Leaders for the SSES 2010 Plume Exercise evaluated on October 5 and 6, 2010. The following constitutes the managing staff for the Exercise Evaluation:

Darrell Hammons, DHS, Radiological Assistance Committee Chairman
Barton Freeman, DHS, Exercise Evaluation Program Manager and Site Specialist
John Price, DHS, Team Leader, Pennsylvania Emergency Operations Center
Martin Vyeniolo, DHS, Team Leader, Luzerne County Emergency Operations Center
Robert Neff, DHS, Team Leader, Columbia County, Emergency Operations Center
Richard Kinard, DHS, Team Leader, Technical Evaluations
Joseph Suders, DHS, Team Leader, Out of Sequence Events - Schools, Reception, Mass Care
Andrew Hower, DHS, Team Leader, Support County Emergency Operations Centers

Also, the following personnel evaluated locations as representatives of the Radiological Assistance Committee:

Richard Barkley, US Nuclear Regulatory Commission
James Ostaszewski, US Department of Transportation, Federal Aviation Administration
Marcos Aquino, US Environmental Protection Agency

Additional evaluation assistance was provided by FEMA Regions I and II by providing the following Radiological Emergency Preparedness Program personnel:

Bob Swartz, Region I
Patricia Mason, Region II
Christopher Cammarata, Region II
Miriam Weston, Region II
Laura Forrest, Region II
Brian Hasemann, Region II

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Susquehanna Steam Electric Station

DATE: 2010-10-05, SITE: Susquehanna Steam Electric Station, PA

LOCATION	EVALUATOR	AGENCY
Pennsylvania Emergency Operations Center	Paul Cormier *John Price	ICF FEMA RIII
Pennsylvania Joint Information Center	Paul Cormier	ICF
Pennsylvania Accident Assessment Center, State Emergency Operations Center-Bureau of Radiation Protection	*Richard Kinard	FEMA RIII
Pennsylvania Bureau of Radiation Protection Activities, Susquehanna Steam Electric Station Emergency Operations Facility	Reggie Rodgers	ICF
Pennsylvania Media Operations Center, Wilkes-Barre	Roger Kowieski	NTHMC
Pennsylvania Bureau of Radiation Protection, Radiological Rapid Response Vehicle	*Richard Kinard	FEMA RIII
PA State Field Monitoring Team A, South East Region	*Richard Kinard	FEMA RIII
PA State Field Monitoring Team B, South East Region	*Richard Kinard	FEMA RIII
Pennsylvania State Traffic and Access Control Points, State Police Barracks Bloomsburg	Michael Meshenberg	ICF
Columbia County Emergency Operations Center	Joseph Keller *Robert Neff Roy Smith Wendy Swygert	ICF FEMA RIII ICF ICF
Columbia County Emergency Worker Monitoring and Decontamination Station, Columbia Montour Vo-Tech School	Ronald Biernacki	ICF
Columbia County, Berwick Borough/Briar Creek Borough Emergency Operations Center	John Flynn Tina Lai	ICF FEMA RIII
Columbia County, Berwick Borough/Briar Creek Borough Back-up Route Alerting	John Flynn	ICF
Columbia County, North Centre Township Emergency Operations Center	Thomas Hegele Patricia Mason	ICF FEMA RII
Columbia County, North Centre Township Back-up Route Alerting	Thomas Hegele	ICF
Columbia County, South Centre Township Emergency Operations Center	Laura Forrest Elizabeth Haney	FEMA RII ICF
Columbia County, South Centre Township Traffic and Access Control	Elizabeth Haney	ICF
Luzerne County Emergency Operations Center	James McClanahan Michael Shuler *Martin Vyenielo	ICF FEMA RIII FEMA RIII
Luzerne County Emergency Worker Monitoring and Decontamination Station, Wright Township Volunteer Fire Department	Marcy Campbell	ICF
Luzerne County, Conyngham Township Emergency Operations Center	Robert Black Robert Lemeshka	ICF ICF
Luzerne County, Conyngham Township Back-up Route Alerting	Robert Lemeshka	ICF
Luzerne County, Dorrance Township Emergency Operations Center	Quirano Iannazzo Bob Swartz	ICF FEMA RI
Luzerne County, Hollenback Township Emergency Operations Center	Marcos Aquino Rosemary Samsel	EPA RIII ICF
Luzerne County, Nanticoke City Emergency Operations Center	Henry Christiansen Kent Tosch	ICF ICF
Luzerne County, Nanticoke City Traffic and Access Control	Kent Tosch	ICF
Luzerne County, Slocum Township Emergency Operations Center	Michael Burns Robert Gantt	ICF ICF
Lackawanna County Emergency Operations Center	Miriam Weston	FEMA RII
Lackawanna County Reception Center, Big Lots Center	Tina Lai	FEMA RIII

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After Action Report/Improvement Plan

Susquehanna Steam Electric Station

Lackawanna County Monitoring and Decontamination Center, Scranton/Dunmore YMCA	Nicholas DePierro	ICF
Lackawanna County Mass Care Center, Dunmore YMCA	Nicholas DePierro	ICF
Lycoming County Emergency Operations Center	Brian Hasemann	FEMA RII
Lycoming County Reception Center, Lycoming Mall	Daryl Thome	ICF
Lycoming County Monitoring and Decontamination Center, Hughesville High School	Ronald Bonner	ICF
Lycoming County Mass Care Center, Hughesville High School	Daryl Thome	ICF
Montour County Emergency Operations Center	Bernie Hannah	ICF
Northumberland County Emergency Operations Center	Christopher Cammarata	FEMA RII
Northumberland County Reception Center, Shikellemy High School, Sunbury	Robert Jeffries	ICF
Northumberland County Monitoring and Decontamination Center, Shikellemy High School - Sunbury	Sonia Eischen	ICF
Northumberland County Mass Care Center, Shikellemy High School - Sunbury	Robert Jeffries	ICF
Schuylkill County Emergency Operations Center	Administrative Evaluator	
Schuylkill County Reception Center, Marian High School	William Palmer	ICF
Schuylkill County Mass Care Center, Marian High School	William Palmer	ICF
Schuylkill County Monitoring and Decontamination Center, Marian High School	David Jacobson	ICF
Union County Emergency Operations Center	James Ostaszewski	DOT/FAA
Union County Reception Center, Montandon Elementary School	David Petta	ICF
Union County Monitoring and Decontamination Center, Lewisburg Area High School	Reggie Rodgers	ICF
Union County Mass Care Center, Lewisburg Area High School	David Petta	ICF
Wyoming County Emergency Operations Center	Richard Barkley	Nuclear Regulatory Commission, Region I
Wyoming County Reception Center, Tunkahannock Middle School	Kim Wood	ICF
Wyoming County Monitoring and Decontamination Center, Tunkahannock Middle School	Keith Earnshaw	ICF
Wyoming County Mass Care Center, Tunkahannock Middle School	Kim Wood	ICF
Columbia County, Benton Area School District	Paul Cormier	ICF
Columbia County, Benton Area School District, Benton Area Middle/High School	Paul Cormier	ICF
Columbia County, Berwick Area School District	Nicholas DePierro	ICF
Columbia County, Berwick Area School District, Nescopeck Elementary School	Nicholas DePierro	ICF
Columbia County, Berwick Area School District, Salem Elementary School	Daryl Thome	ICF
Columbia County, Bloomsburg Area School District	Ronald Bonner	ICF
Columbia County, Bloomsburg Area School District, Bloomsburg High School	Ronald Bonner	ICF
Columbia County, Bloomsburg Area School District, Bloomsburg Area Middle School	Ronald Bonner	ICF
Columbia County, Central Columbia School District	Robert Jeffries	ICF
Columbia County, Central Columbia School District, Central Columbia Middle School	Robert Jeffries	ICF

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Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Susquehanna Steam Electric Station

Columbia County, Columbia-Montour Area Vocational Technical School	Sonia Eischen	ICF
Luzerne County, Crestwood School District	William Palmer	ICF
Luzerne County, Crestwood School District, Rice Elementary School	William Palmer	ICF
Luzerne County, Greater Nanticoke Area School District	David Jacobson	ICF
Luzerne County, Greater Nanticoke Area School District, K.M. Smith Elementary School	David Petta	ICF
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Luzerne County, Northwest Area School District	Kim Wood	ICF
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APPENDIX D: ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
AD	Administrative Director
ALARA	As Low As Reasonably Achievable
ARC	American Red Cross
ARES	Amateur Radio Emergency Services
BASD	Bloomsburg Area School District
CART	County Animal Rescue Team
CCEMA	Columbia County Emergency Management Agency
CCEMO	Colombia County Emergency Management Office
CCEOC	Columbia County Emergency Operations Center
CCSD	Central Columbia School District
CDE	Committed Dose Equivalent
CEB	County Emergency Board
CHS	Crestwood High School
CMC	Community Medical Center
CSD	Crestwood School District
DEMC	Deputy Emergency Management Coordinator
DRD	Direct Reading Dosimeter
DT	Dorrance Township
DTEMA	Dorrance Township Emergency Management Agency
DTEOC	Dorrance Township Emergency Operations Center
DVD	Digital Video Disk
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EDRD	Electronic Direct Reading Dosimeter
EM	Emergency Manager
EMA	Emergency Management Agency
EMC	Emergency Management Coordinator
EMD	Emergency Management Director
EMS	Emergency Medical Service
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPZ	Emergency Planning Zone
ESF	Emergency Support Function

EW	Emergency Worker
FAC	Food Agriculture Council
FD	Fire Department
FEMA	Federal Emergency Management Agency
GE	General Emergency
HMES	Huntington Mills Elementary School
HMSO	Health Medical Services Officer
IC	Incident Commander
JIC	Joint Information Center
LAHS	Lewisburg Area High School
LCEMA	Luzerne County Emergency Management Agency
LCEOC	Lycoming County Emergency Operations Center
LHS	Lewisburg High School
MCEOC	Montour County Emergency Operations Center
MES	Montandon Elementary School
MHSMCC	Marian High School Mass Care Center
MHSRC	Marian High School Reception Center
MOC	Media Operations Center
NRC	Nuclear Regulatory Commission
PA	Public Address
PAD	Protective Action Decision
PAR	Protective Action Recommendation
PEMA	Pennsylvania Emergency Management Agency
PIM	Public Information Manager
PIO	Public Information Officer
PPHD	Pennsylvania Public Health Department
PRD	Permanent Record Dosimeters
PSP	Pennsylvania State Police
RAC	Radiological Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RCM	Reception Center Manager
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RES	Rice Elementary School
RO	Radiological Officer
RSO	Radiation Safety Officer
RTES	Rush Township Emergency Services
SAC	Staging Area Commander
SAE	Site Area Emergency
SCEMA	Schuylkill County Emergency Management Agency

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Susquehanna Steam Electric Station

SCTEOC	South Centre Township Emergency Operations Center
SES	Smith Elementary School
SESS	Susquehanna Electric Steam Station
SEVAN	State Emergency Voice Alerting Network
SOP	Standard Operating Procedure
SSES	Susquehanna Steam Electric Station
TC	Transportation Coordinator
TCP	Traffic Control Points
TEDE	Total Effective Dose Equivalent
UC	Union County
UCMCC	Union County Mass Care Center
UCRC	Union County Reception Center
VHF	Very High Frequency

APPENDIX E: EXERCISE PLAN

The enclosed Exercise Plan was created as an overall tool for facilitation and implementation of the SSES 2010 Plume Exercise and to integrate the concepts and policies of the Homeland Security Exercise Evaluation Program with the Radiological Emergency Preparedness Program Exercise Methodology. The Exercise Plan was originally drafted and published by the Pennsylvania Emergency Agency (PEMA) as a independent document and is annexed here.

The "Susquehanna Steam Electric Station Extent of Play 2010 Radiological Emergency Preparedness Exercise" was negotiated and agreed upon by FEMA Region III, PEMA, and the emergency management agencies of the Risk and Support Counties. It is included as an Appendix of the Exercise Plan.

Exercise Plan

NATIONAL EXERCISE PROGRAM

U.S. DEPARTMENT OF HOMELAND SECURITY



EXERCISE DATE: **10/05/10**



FEMA

PUBLISHING DATE: **09/15/10**

For Official Use Only

**Radiological Emergency Preparedness (REP)/
Homeland Security Exercise and Evaluation Program (HSEEP)**

ExPlan

2010 SUSQUEHANNA STEAM ELECTRIC STATION PLUME EXERCISE

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Radiological Emergency Preparedness (REP)/
Homeland Security Exercise and Evaluation Program (HSEEP)

ExPlan **2010 SUSQUEHANNA STEAM ELECTRIC STATION PLUME EXERCISE**

PREFACE

The 2010 Susquehanna Steam Electric Station Plume Exercise Evaluated Full Scale Exercise (FSE) is sponsored by the Federal Emergency Management Agency (FEMA) and the Pennsylvania Emergency Management Agency (PEMA). This Exercise Plan (ExPlan) was produced with input, advice, and assistance from the Exercise Planning Team (EPT), which followed the guidance set forth in the Federal Emergency Management Agency, Homeland Security Exercise and Evaluation Program (HSEEP).

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

The 2010 Susquehanna Steam Electric Station Plume Exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, Controllers, and Evaluators, but Players may view other materials deemed necessary to their performance. The ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbook is a restricted document intended for Controllers and Evaluators only.*

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

Radiological Emergency Preparedness (REP)/
Homeland Security Exercise and Evaluation Program (HSEEP)

ExPlan

2010 SUSQUEHANNA STEAM ELECTRIC STATION PLUME EXERCISE

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Per FEMA Region III REP, the portions of the ExPlan contained here are no longer For Official Use Only (FOUO) following completion of this exercise.

HANDLING INSTRUCTIONS

1. The title of this document is the *2010 Susquehanna Steam Electric Station Plume Exercise Plan (ExPlan)*.
2. The information gathered in this ExPlan is *For Official Use Only (FOUO)* and should be handled as sensitive information not to be disclosed. This document should be safeguarded, handled, transmitted, and stored in accordance with appropriate security directives. Reproduction of this document, in whole or in part, without prior approval from the Exercise Planning Director is prohibited.
3. At a minimum, the attached materials will be disseminated only on a need-to-know basis and when unattended, will be stored in a locked container or area offering sufficient protection against theft, compromise, inadvertent access, and unauthorized disclosure.
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CHAPTER 1: GENERAL INFORMATION

Introduction

The 2010 Susquehanna Steam Electric Station Plume Exercise is a full-scale exercise (FSE) designed to establish a learning environment for players to exercise emergency response plans, policies, and procedures as they pertain to Nuclear Power Plant accidents. An FSE is a complex event that requires detailed planning. To conduct an effective exercise, subject matter experts (SMEs) and local representatives from numerous agencies have taken part in the planning process and will take part in exercise conduct and evaluation.

This Exercise Plan (ExPlan) was produced at the direction of the Federal Emergency Management Agency and the Pennsylvania Emergency Management Agency with the input, advice, and assistance of the Exercise Planning Team. The 2010 Susquehanna Steam Electric Station Plume Exercise is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

Confidentiality

The 2010 Susquehanna Steam Electric Station Plume Exercise is an *unclassified exercise*. The control of information is based more on public sensitivity regarding the nature of the exercise than on the actual exercise content. Some exercise material is intended for the exclusive use of exercise planners, controllers, and evaluators, but players may view other materials deemed necessary to their performance. This ExPlan may be viewed by all exercise participants, *but the Controller and Evaluator (C/E) Handbooks are restricted documents intended for controllers and evaluators only.*

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

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

Purpose

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

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

Target Capabilities

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

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

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

Exercise Objectives

The Emergency Preparedness Evaluation Areas – the elements and sub-elements – for this exercise are those that are required to be demonstrated in every exercise, as required by 67 FR 20580 (April 25, 2002) and the *Interim REP Program Manual (August 2002)*. Appendix B Extent of Play shows the emergency preparedness elements that are required to be demonstrated in the 2010 Susquehanna Steam Electric Station Plume Exercise, along with the level of demonstration that will be displayed in the exercise (i.e., fully demonstrated, limited demonstration, simulated, out-of-sequence interviews, not demonstrated).

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

Outstanding Issues

There are 3 Areas Requiring Corrective Action (ARCAs) as a result of the FEMA-evaluated plume-phase exercise at Susquehanna Steam Electric Station in October 2008:

ARCA issue numbers:

63-08-3.b.1-A-01	Condition: The Emergency Operations Center (EOC) received notification from the Columbia County EOC over the radio and telephone that Emergency Workers were to ingest potassium iodide (KI). However, these messages were not passed forward to the Emergency Management Coordinator.
63-08-3.c.2-A-02	Condition: The Emergency Medical Services Representative did not provide Fire/Rescue personnel with contact information for all hearing impaired individuals for their use in route alerting and failed to notify or address other special needs individuals.
63-08-5.a.3-A-03	Condition: The crew that demonstrated the Berwick Borough/Briar Creek Borough (BBC) backup alert route (Zone 1) ran the route simulating the use of the vehicle's siren, emergency lights and public address system. After completing the route, the crew was asked to demonstrate the vehicle's emergency notification equipment. The siren and emergency lights tests were satisfactory. However, the volume of the public address system was insufficient to provide adequate carrying power of the message. The volume was not much louder than ordinary conversation level. Several minutes were spent attempting to raise the volume without success. The crew was advised that if the volume could be raised, a re-demonstration could occur. Eventually, the BBC Emergency Management Director and the Fire/Rescue Officer were informed and agreed that the volume could not be improved.

CHAPTER 2: EXERCISE LOGISTICS

Exercise Summary

General

The 2010 Susquehanna Steam Electric Station Plume Exercise is designed to establish a learning environment for players to exercise their plans and procedures for responding to an incident at a nuclear power plant. The 2010 Susquehanna Steam Electric Station Plume Exercise will be conducted on October 5, 2010. Out of sequence evaluations will be conducted as follows:

Schools - October 5th

Pennsylvania State Police – October 5th

Emergency Worker Monitoring & Decontamination - October 6th

Reception Centers – October 6th

Mass Care Shelters – October 6th

Exercise play on October 5th is scheduled to end at 2200 hours or before. The exercise may conclude when the Lead Controller in consultation with FEMA and the Utility determine that the exercise objectives have been met at each venue.

Assumptions

Assumptions constitute the implied factual foundation for the exercise and, hence, are assumed to be present before the start of the exercise. The following general assumptions apply to the 2010 Susquehanna Steam Electric Station Plume Exercise:

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

Constructs and Constraints

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

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

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

Exercise Participants

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

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

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

Exercise Tools

Controller and Evaluator Handbooks

The 2010 Susquehanna Steam Electric Station Plume Exercise Controller and Evaluator Handbooks are designed to help exercise Controllers and Evaluators conduct and evaluate an effective exercise. These Handbooks also enable Controllers and Evaluators to understand their roles and responsibilities in exercise execution and evaluation. Should a Player, Observer, or media representative find an unattended Handbook, it should be provided to the nearest Controller or Evaluator.

Master Scenario Events List

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

For the 2010 Susquehanna Steam Electric Station Plume Exercise the MSEL will be used primarily for out of sequence exercise play. During the plume phase the exercise will be driven by the simulator at the utility. Notifications will go out from the utility in the same manner as they would in a real event with all communications being preceded and terminated by the phrase "This is a Drill". Additionally, Bureau of Radiation Protection (BRP) field teams will be utilizing "exercise measuring instruments" that receive input from the Virtual Plume software. The Virtual Plume software will be programmed to reflect expected conditions at any given time during the exercise.

Exercise Implementation

Exercise Play

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

Exercise Rules

The following are the general rules that govern exercise play:

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

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

Safety Requirements

General

Exercise participant safety takes priority over exercise events. Although the organizations involved in the 2010 Susquehanna Steam Electric Station Plume Exercise come from various response agencies, they share the basic responsibility for ensuring a safe environment for all personnel involved in the exercise. In addition, aspects of an emergency response are dangerous. Professional health and safety ethics should guide all participants to operate in their assigned roles in the safest manner possible. The following general requirements apply to the exercise:

- An exercise Safety Controller will be identified and be responsible for participant safety.

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

Exercise Setup

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

Accident Reporting and Real Emergencies

- Anyone observing a participant who is seriously ill or injured will provide aid within their training, call the County 911 Center for additional aid or enlist the aid of another person to call, and advise the nearest controller. Anyone calling County 911 will use the phrase "this is not a drill" prior to explaining the injury or illness.
- The controller who is made aware of a real emergency will contact the County 911 center (if this call has not already been made) and request the appropriate aid. The controller will use the phrase "this is not a drill" prior to explaining the injury or illness.
- The controller will then contact the Lead Controller and Exercise Director with the following information:
 - Venue/function
 - Location within the venue/function
 - Condition of injured parties
 - Requirements for medical aid, fire suppression, rescue, or security resources.
- If the nature of the emergency requires a suspension of the exercise at the venue/function, all exercise activities at that facility will immediately cease. Exercise play may resume at that venue/function once the emergency situation has been addressed.
- Exercise play at other venue/functions should not cease if one venue/function has declared a "Real-World Emergency" unless they are reliant on the affected venue.

- If a real emergency occurs that affects the entire exercise, the exercise may be suspended or terminated at the discretion of the Exercise Director and Lead Controller. The notification will be made from the State Emergency Operations Center. The Lead Controller will notify the SimCell by phone.

Site Access

Security

Exercise play for the 2010 Susquehanna Steam Electric Station Plume Exercise will be conducted at numerous sites with varying degrees of security requirements. The Susquehanna Steam Electric Station will control entry to the Utility and the Emergency Operations Facility. Security at State, County, and Municipal Emergency Operations Centers will be conducted according to their individual security procedures. Individual Site Controllers will be in charge of entry into their respective exercise sites. To prevent confusion and interruption of the exercise, access to the exercise sites and the SimCell will be limited to exercise participants and approved Observers only. Players should advise their venue's controller or evaluator if an unauthorized person is present. Each organization should follow its internal security procedures, augmented as necessary to comply with exercise requirements.

PEMA Observers and Liaison Officers

PEMA will assign Observers and Liaison Officers to each County and Municipal Emergency Operations Center that is being evaluated in the 2010 Susquehanna Steam Electric Station Plume Exercise. The Lead Controller will provide a list of Observers and Liaison Officers to the appropriate Off-Site Response Organizations prior to the day of the exercise. All Observers and Liaison Officers will receive a pre-exercise briefing.

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

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

Parking and Directions

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

Restroom Facilities

Restroom facilities will be available at each venue.

Exercise Identification

Exercise participants will display their existing organizational identification badges.

Communications Plan

Exercise Start, Suspension, and Termination Instructions

The exercise on October 5, 2010 is scheduled to run for 6.5 hours or until the Lead Controller after consultation with FEMA and the Utility determine that the exercise objectives have been met. The exercise is scheduled to end by 2200 hours. The Lead Controller will announce the exercise suspension or termination through the State Emergency Operations Center.

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

Player Communication

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

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

Player Briefing

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

Public Affairs

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

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

CHAPTER 3: PLAYER GUIDELINES

Exercise Staff

Exercise Director

The Exercise Director has the overall responsibility for planning, coordinating, and overseeing all exercise functions. The Exercise Director for the 2010 Susquehanna Steam Electric Station Plume Exercise is the Radiological Emergency Preparedness Regional Assistance Committee Chair.

The Exercise Director has delegated the following responsibilities to other team members:

The FEMA Region III Site Specialist for the Susquehanna Steam Electric Station has authority to make determinations concerning evaluation issues and re-demonstrations,

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

Trusted Agents

Trusted agents are exercise planners and participants who are responsible for developing the Scenario and the Master Scenario Events List (MSEL). These documents are restricted and are not available to the rest of the Exercise Planning Team, Players, or other Participants. The trusted agents for the 2010 Susquehanna Steam Electric Station Plume Exercise include the Exercise Director, Lead Controller, Bureau of Radiation Protection (BRP) Representative, FEMA Emergency Management Program Specialist, and the Radiological Emergency Preparedness Regional Assistance Committee (RAC) Chair.

Lead Controller

The Lead Controller also functions as a Trusted Agent. As such he is involved in developing the Master Scenario Events List and is privy to the scenario used at the Utility to generate exercise play. The Lead Controller is responsible for scheduling controllers at the "Out of Sequence" components of the exercise and the 2010 Susquehanna Steam Electric Station Plume Exercise. The Lead Controller monitors exercise progress and coordinates decisions regarding deviations or significant changes to the scenario caused by unexpected developments during play. The Lead Controller monitors actions by individual Controllers and ensures they implement all designated and modified actions at the appropriate time. The Lead Controller will be the PEMA REP Training Program Manager and is stationed in the State EOC during the Plume Exercise.

Controllers

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

Lead Evaluator

The Lead Evaluator is responsible for the overall evaluation of the 2010 Susquehanna Steam Electric Station Plume Exercise. The Lead Evaluator monitors exercise progress and stays in contact with the Lead Controller regarding changes to the exercise during play. The Lead Evaluator monitors actions of individual Evaluators and ensures they are tracking progress of the players in accordance with the Overview of Play. The Lead Evaluator debriefs the evaluators after the exercise and oversees the entire evaluation and After Action process. The Lead Evaluator will be the FEMA Region III REP Site Specialist.

Evaluators

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

Player Instructions

Before the Exercise

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

- Bureau of Radiation Protection Field Monitoring Teams will be briefed by the BRP Coordinator.

During the Exercise

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

Following the Exercise

- At the end of the exercise at your facility, participate in a debriefing with the controllers and evaluators.
- Provide all rosters, sign in sheets, logs, messages, notes or materials generated from the exercise to your controller or evaluator for review and inclusion in the AAR.

- Bureau of Radiation Protection Field Monitoring Teams will be debriefed immediately following the exercise by the BRP Coordinator.

Simulation Guidelines

Because the 2010 Susquehanna Steam Electric Station Plume Exercise is of limited duration and scope, the physical description of what would fully occur at the incident sites and surrounding areas will be relayed to the Players by Simulators or Controllers.

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

CHAPTER 4: EVALUATION AND POST-EXERCISE ACTIVITIES

Exercise Documentation

The goal of the 2010 Susquehanna Steam Electric Station Plume Exercise is to comprehensively exercise and evaluate the OROs' plans and capabilities as they pertain to a potential nuclear power plant incident. After the exercise, data collected by Controllers, Evaluators, and Players will be used to identify strengths and areas for improvement in the context of the exercise design objectives.

Exercise Evaluation Guides

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

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

DEBRIEFING

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

Exercise Evaluation Hotwash

Controllers, Evaluators, and selected exercise participants will attend a facilitated Controller and Evaluator Hotwash on October 7 at 1500 hours at the Ramada Inn. During the Hotwash these individuals will discuss their observations of the exercise in an open environment to clarify actions taken during the exercise.

Participants and Public/Media Briefings

The Participants Briefing will be conducted on October 8 at 1000 hours followed immediately by the Public/Media Briefing at 1100 hours. Both briefings will be held at the Ramada Inn.

After Action Report

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

After Action Conference and Improvement Plan

The improvement process represents the comprehensive, continuing preparedness effort of which the 2010 Susquehanna Steam Electric Station Plume Exercise is a part. The lessons learned and recommendations from the AAR will be incorporated into the Improvement Plan (IP).

After Action Conference

The After Action Conference (AAC), scheduled for November 4, 2010 at 1000 hours, is a forum for jurisdiction officials to hear the results of the evaluation analysis, validate the findings and recommendations in the draft AAR, and begin development of the IP. The After Action Conference will be conducted via a conference call.

Improvement Plan

The IP identifies how recommendations will be addressed, including what actions will be taken, who is responsible, and the timeline for completion. It is created by key stakeholders from the 2010 Susquehanna Steam Electric Station Plume Exercise participating agency officials during the AAC scheduled for November 4, 2010.

APPENDIX A: EXERCISE SCHEDULE

Table A.1 *Susquehanna Steam Electric Station 2010 Plume Exercise Schedule*

Time (Tentative)	Personnel	Activity
[10/05/10]		
09:00 AM	Out of Sequence Staff	School Exercise
11:00 AM	Out of Sequence Staff	PSP T/ACP Exercise
04:00 PM	Plume Exercise Staff	Plume Exercise
[10/06/10]		
07:00 PM	Out of Sequence Staff	Reception, Mon/Decon, Mass
		Care Exercise
[10/07/10]		
03:00 PM	Federal, State, County EMA	Exercise Hotwash
[10/08/10]		
10:00 AM	Federal, State, County, Local EMA	Exercise Players Briefing Exercise Critique
11:00 AM	Public	Public Meeting/Briefing

APPENDIX B: EXTENT OF PLAY INFORMATION

The following Extent of Play for the Susquehanna Steam Electric Station 2010 Plume Exercise was completed and published on September 14, 2010. The Extent of Play begins on the following page.

SUSQUEHANNA STEAM ELECTRIC STATION

EXTENT OF PLAY

**2010 RADIOLOGICAL EMERGENCY PREPAREDNESS
EXERCISE**



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**SUSQUEHANNA STEAM ELECTRIC STATION
2010 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE**

METHOD OF OPERATION

1. Susquehanna Steam Electric Station (SSES)

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

2. Bureau of Radiation Protection (BRP)

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

Plume Exercise – Nuclear facility EOF – (NOT Evaluated)

Plume Exercise – Field Sampling Teams & Command Vehicle – (10/5/2010) – (NOT Evaluated)

BRP personnel working in the SEOC will NOT be evaluated as participants

3. PEMA Operations at State EOC / PEMA Headquarters

This “Method of Operation” Document includes activities for the Full-Scale Plume Exercise 10/05/2010, and the “Out of Sequence” Activities - 10/5 & 10/6/2010.

A. Plume Exercise – (10/05/2010)

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

B. Plume Exercise – “Out of Sequence” Activities – (10/5 & 10/6/2010)

The PEMA State Emergency Operations Center, augmented by designated PEMA personnel will disseminate exercise related messages to the participating Counties for dissemination to the participating School Districts during the morning of 10/5/2010. The State Emergency Operations Center (SEOC) and County EOC's will participate however NOT be evaluated during the “Out of Sequence” component. PEMA personnel will serve as “observers” at the identified School Districts.

NOTE: The Montour County EOC will be evaluated during the school district exercise during the morning of 10/5/2010.

C. “Out of Sequence” Activities – (10/5 & 10/6/2010) See Attachment A for Time

PEMA personnel will serve as “Observers” at the various field exercise locations during the evening “Out-of-Sequence” component 10/5 & 10/6/2010. An exercise coordinator will remain in the State EOC. The State Emergency Operations Center (EOC) and Counties EOC's will NOT be evaluated during the evening “Out of Sequence” component (10/6/2010).

4. PEMA Area Office Operations

The PEMA Area Offices (Hamburg -Eastern Area and Harrisburg - Central Area) will not be activated nor evaluated during this exercise. Selected staff of the Area Offices will serve as Liaison Officers to Risk and Support Counties as assigned. Liaison Officers are exercise participants.

5. Counties Designated to Participate

A. Plume Phase Exercise: (10/05/2010)

The two risk counties (Columbia and Luzerne), in coordination with PEMA, will demonstrate the capability to mobilize appropriate staff, activate their respective Emergency Operations Centers and implement emergency response operations to include sheltering and/or evacuation. County government will provide direction and coordination to risk municipalities. The six support Counties (Lackawanna,

Lycoming, Northumberland, Schuylkill, Union and Wyoming) will participate in their assigned support roles. Actual sheltering or evacuation of the general public will be simulated.

NOTE: The Montour County EOC will not be evaluated during the plume phase exercise.

6. PEMA Liaison Officers

Liaison officers will be present at the participating risk and support county EOC's, the SSES Emergency Operations Facility (EOF) and the SSES Joint Information Center (JIC) to provide assistance, guidance, and support. These liaison officers will participate as players in the plume phase exercise on 10/05/2010.

7. Controllers

A lead controller will be present in the state EOC for the plume exercise and the out of sequence school exercise. Controllers will be supplied by the utility and will be present at the emergency worker monitoring/decontaminating stations and the mass care monitoring/decontamination centers on 10/6/2010. Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate, regarding radiological readings during the monitoring of personnel. Live radioactive sources will not be used. ***Exception:** individuals tasked with the setup of portal monitoring equipment will use a standard 1 micro curie Cesium 137 source for the purpose of conducting operational tests. Additionally, appropriate test sources will be available and used to verify the operation of the monitoring / survey instruments per manufacturer's recommendations.*

8. PEMA Observers

PEMA staff, qualified county emergency management personnel, and/or nuclear power plant personnel will be assigned, if required, to key locations for the purpose of observing, noting response actions and conditions, and recording observations for future use.

Observers will not take an active part in the proceedings, but will interact with staff members to the extent necessary to fulfill their observer responsibilities. Coaching of players by observers is not permitted except to provide training as appropriate to participants awaiting a re-demonstration. (Refer to paragraph 13)

9. Department of Homeland Security (FEMA/REP) Evaluators

A. Plume Exercise:

Out of Sequence Period: (10/5/2010) Federal evaluators will be present at the identified “out-of-sequence” demonstration sites per Attachment A, Section I.A.1. These include the identified Public School District locations. **NOTE:** The Montour County EOC will be evaluated during the school district exercise during the morning of 10/5/2010.

Plume Phase Exercise: (10/05/2010) Evaluators representing the federal government will be present at the identified risk and support county EOC’s to evaluate player response to the actual and simulated events in the exercise scenario. Additionally, one-third of the risk municipalities in Columbia and Luzerne counties will be federally evaluated. As required, a “floating-evaluator” will be made available for the purpose of evaluating any ORO locations not scheduled to have a federal evaluator, but having a prior issue (Attachment A, Section I.A.2 and I.A.3).

Out of Sequence Period: (10/6/2010) Federal evaluators will be present at identified Reception Centers, Emergency Worker Monitoring and Decontamination Stations and Mass Care / Shelters and Mass Care Monitoring and Decontamination Centers, as identified in Attachment A, Section I.B.1, I.B.2 and I.B.3.

Out of Sequence Period: (10/6/2010) Federal evaluators will be present at the identified “out-of-sequence” demonstration sites per Attachment A, I.A.5. This includes the Pennsylvania State Police location.

10. Demonstration Windows

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

The “demonstration windows” for this exercise are:

A. Plume Phase Exercise

The out-of-sequence MS-1 hospital demonstration was federally evaluated at

Susquehanna Health on October 1, 2009.

The out-of-sequence exercise window for school demonstrations will be from 9:00 - 11:00 a.m. on Tuesday, 10/5/2010.

The out-of-sequence demonstration of reception centers, mass care centers, monitoring / decontamination centers and emergency worker stations will be conducted from 7:00 - 9:30 p.m. on Wednesday 10/6/2010. Locations are specified within Attachment A, Section II.

The out-of-sequence interview of Pennsylvania State Police traffic control / access control points will be from 10:00 a.m. - 12:00 noon on Wednesday, 10/6/2010.

Municipal TCP demonstrations will occur in conjunction with Municipal EOC operations on Tuesday 10/5/2010. (Please refer to the Extent of Play Demonstration Tables, Attachment A)

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

County and municipal EOC operations will be conducted on Wednesday 10/05/2010 from 4 p.m. – 10:30 p.m. with the exception of Montour County which will be evaluated during the out of sequence school phase on 10/5/2010. (Please refer to the Extent of Play Demonstration Tables, Attachment A)

B. Post Plume Exercise

NOTE: The last post-plume (ingestion) exercise was conducted August 2004 for the SSES.

11. Stand-down

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

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

- B. Support counties may likewise request approval from the State EOC to terminate the exercise upon completion of all evaluated objectives.
- C. The risk county EOC's will remain operational until the exercise is officially terminated by the State. The State EOC will issue an Exercise Termination Message.

12. General Concepts

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

13. Re-demonstrations

During the out of sequence demonstrations on 10/5 & 10/6/2010, or the plume phase demonstrations on 10/05/2010, any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise, provided it does not negatively interfere with the exercise. Refresher training may be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators. PEMA may advise the RAC Chair prior to initiating any re-demonstrations. It is permissible to extend the demonstration window, within reason, to accommodate the re-demonstration. Activities corrected from a re-demonstration will be so noted.

SUSQUEHANNA STEAM ELECTRIC STATION
2010 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

EXTENT OF PLAY AGREEMENT

Sub-element 1.a – Mobilization

INTENT

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

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play:

Pre-positioning of state emergency personnel (Liaison Officers) at the Emergency Operations Facility (EOF), the Utility Joint Information Center (JIC) and Risk and Support Counties is appropriate due to the commuting distance from the individual's duty location or residence. Risk counties/municipalities and support counties will conduct call-outs to demonstrate the mobilization of key personnel. The utility JIC will be evaluated for this drill.

- *Actual calls (or pager notifications) will be made to the county/municipal EOC personnel for the Plume Phase exercise, 10/05/2010 per plans and procedures.*
- *In all instances, the demonstration of a shift change is **NOT** required. Twenty-four hour staffing will be demonstrated by means of a roster or staffing chart.*
- *All out-of-sequence players will be pre-positioned and equipment will be demonstrated or shown to be in inventory (School District personnel, Pennsylvania State Police TCP/ACP, Reception Centers, Emergency Worker Monitoring and Decontamination Stations Mass Care/Sheltering Centers and Monitoring and Decontamination Centers and for the purpose of this exercise, Montour County EOC).*

Sub-element 1.b – Facilities

INTENT

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

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play: None. Note: All facilities have been evaluated in previous exercises.

Sub-element 1.c - Direction and Control

INTENT

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

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play: None

Sub-element 1.d – Communications Equipment – N/A

INTENT

This sub-element derives from NUREG-0654, which provides that Offsite Response

Organizations (ORO) should establish reliable primary and backup communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play:

The plant will communicate to the risk counties and State EOC utilizing the Automatic Ring Down System (ARD) (Primary) and telephone/internet (Secondary). Risk and Support Counties will intercommunicate

with the State EOC via Telephone (Primary, SEVAN (Secondary) and other systems. In the event that the plant is unable to contact the state EOC then Luzerne County EOC will be contacted and fulfill the role of primary contact until such time as communications with the State EOC can be made.

Risk Counties will communicate with their risk municipalities via public safety radio frequencies (EMA Radio) (Primary), Commercial Telephone (Secondary), Internet, Fax, Amateur Radio Communications (ARES/RACES) or other available means.

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

INTENT

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

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

EXTENT OF PLAY

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

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV-700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument, or the calibration frequency may be verified by other means. Additionally, instruments being

used to measure activity should have a range of reading sticker affixed to the side of the instrument. The above considerations should be included in 4.a.1 for field team equipment; 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment; reception center and emergency worker facilities' equipment under 6.a.1; and ambulance and medical facilities' equipment under 6.d.1.

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

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

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

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

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

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

PEMA Negotiated Extent of Play:

Radiological Survey Instruments are calibrated per manufactures recommendations. Support counties do not have DRDs, or KI, but those responsible for reception centers and / or monitoring and decontamination centers will have PRDs.

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

Electronic DRD's are in use in the SSES Plume EPZ. Calibration/testing information will be available to the evaluator.

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

EVALUATION AREA 2

Sub-element 2.a - Emergency Worker Exposure Control

INTENT

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

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

Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to ensure that an exposure control system, including

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

EXTENT OF PLAY

OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures. Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels.

As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established Protective Action Guides (PAGs) for KI administration.

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

PEMA Negotiated Extent of Play:

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

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

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

INTENT

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to use all available data to independently project integrated dose and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and

procedures or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (for example, other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play: None/Not Evaluated

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

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

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

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

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

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

PEMA Negotiated Extent of Play: None/Not Evaluated

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play: None

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

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

INTENT

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

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

PEMA Negotiated Extent of Play:

This sub-element will NOT be evaluated during this exercise. This element was demonstrated during the Post Plume (Ingestion) Exercise conducted during the week of August 16, 2004.

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

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

Determination of areas to be restricted should be based on factors such as the mix of radio

nuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.

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

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

Responsible OROs should demonstrate the capability to develop a strategy for authorized re-entry of individuals into the restricted zone, based on established decision criteria. OROs should demonstrate the capability to modify those policies for security purposes (e.g., police patrols), for maintenance of essential services (e.g., fire protection and utilities), and for other critical functions. They should demonstrate the capability to use decision-making criteria in allowing access to the restricted zone by the public for various reasons, such as to maintain property (e.g., to care for farm animals or secure machinery for storage), or to retrieve important possessions.

Coordinated policies for access and exposure control should be developed among all agencies with roles to perform in the restricted zone. OROs should demonstrate the capability to establish policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events.

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

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

PEMA Negotiated Extent of Play:

This sub-element will NOT be evaluated during this exercise. This element was demonstrated during the Post Plume Exercise conducted during the week of August 16, 2004.

EVALUATION AREA 3

Protective Action Implementation

INTENT

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

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

EXTENT OF PLAY

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

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

During a plume phase exercise, emergency workers should demonstrate the procedures to be

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

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be affected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, for example, at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry.

Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

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

PEMA Negotiated Extent of Play:

Radiological briefings will be provided to address exposure limits and procedures to replace personnel approaching limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI will be simulated. The completion of a "Dosimetry-KI Report Form" will be demonstrated.

ORO's should also demonstrate the use of all applicable dosimetry forms.

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

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

Emergency workers who are assigned to low exposure rate areas, e.g., at counting laboratories, emergency operations centers, and communications centers, may have individual permanent record dosimeters or they may be monitored by dosimeters strategically placed in the work area.

In Pennsylvania this will be accomplished through the use of an area kit. The area kit process is explained in State, County and Municipal Plans.

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

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

Category B: 1 PRD and 1 unit of KI

Category C: 1 PRD

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

Sub-element 3.b – Implementation of KI Decision

INTENT

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

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

EXTENT OF PLAY

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

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

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

PEMA Negotiated Extent of Play:

Within Pennsylvania, the Pennsylvania Department of Health is responsible for distribution of KI to the general public located within the EPZ. Pre-distribution is accomplished on an annual basis. Pennsylvania does not distribute KI at reception centers.

Evaluation of emergency worker KI quantities will be verified using inventory sheets. KI will not

be removed from storage locations and boxes will not be opened. KI questions will be addressed through interviews.

Personnel assigned to operate Monitoring / Decontamination centers and stations are not issued DRDs or KI since the centers/stations are located outside the EPZ. Simulated PRDs with mock serial numbers may be issued.

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

PEMA Negotiated Extent of Play:

Lists of special needs persons including name, address, contact information, and description of need shall be maintained at their respective municipal EOC (based upon residential jurisdiction). Copies of these lists will not be provided to the evaluators; however, evaluators will be allowed to inspect the lists during the exercise.

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

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play:

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

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

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

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

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

INTENT

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

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

EXTENT OF PLAY

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

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

Where OROs lack the authority to control access for certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies who do have the authority to control access.

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

PEMA Negotiated Extent of Play:

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

Reception Centers shall provide a traffic control plan for the location being evaluated.

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

EXTENT OF PLAY

OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, should be logged. All activities must be based on the ORO's plans and procedures and completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

PEMA Negotiated Extent of Play:

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

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

INTENT

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

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play:

Not demonstrated during this exercise. This element was demonstrated during the SSES Post Plume Exercise conducted during the week of August 16, 2004.

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play:

Not demonstrated during this exercise. This element was demonstrated during the SSES Post Plume Exercise conducted during the week of August 16, 2004.

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

INTENT

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) should demonstrate the capability to implement plans, procedures, and

decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

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

EXTENT OF PLAY

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

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

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

Return: OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize services and facilities that require restoration

within a few days, and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

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

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

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

PEMA Negotiated Extent of Play:

This sub-element will NOT be demonstrated during this exercise. This was demonstrated during the SSES Post-Plume Exercise conducted the week of August 16, 2004

EVALUATION AREA 4

Field Measurement and Analysis

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

INTENT

This sub-element derives from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material

may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

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

EXTENT OF PLAY

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

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

PEMA Negotiated Extent of Play:

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

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

EXTENT OF PLAY

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

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

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

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

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

PEMA Negotiated Extent of Play:

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

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an

appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I. 9)

EXTENT OF PLAY

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

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

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

PEMA Negotiated Extent of Play:

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

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

INTENT

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

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

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play:

This element will NOT be demonstrated during this exercise. This was demonstrated during the Post Plume Exercise the week of August 16, 2004.

Sub-element 4.c - Laboratory Operations

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

PEMA Negotiated Extent of Play:

This sub-element will not be evaluated during this SSES exercise. This element was demonstrated during the 2007 TMI Exercise.

EVALUATION AREA 5

Emergency Notification and Public Information

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

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

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

PEMA Negotiated Extent of Play:

The Commonwealth of Pennsylvania has implemented a Statewide EAS Control system in cooperation with the Pennsylvania Association of Broadcasters per the State Emergency Communications Committee and Pennsylvania Emergency Alert System State EAS Plan (April 1, 2004) (Note that a revised plan has been submitted to the FCC and is awaiting approval). The State EOC (PEMA) is the initiating point for the activation of the EAS. Risk Counties have the control equipment for activation of sirens. Coordination will occur between the State EOC and the affected counties with respect to the Alert and Notification System (ANS) process as to when the sirens and EAS messages will occur. Sirens will be coordinated and the sounding simulated at the appropriate time with the simulated activation of EAS taking place approximately 3 minutes following the simulated activation of the sirens. Regular Broadcasting will not be interrupted on the EAS Stations. All subsequent actions to broadcast stations will be simulated.

*Broadcast of the message(s) or test message(s) is **NOT** required and **NOT** requested. Counties may elect to provide Subsequent News Bulletins or County Specific EAS messages to their EAS stations.*

*Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, ANS activation should be accomplished in a timely manner for primary alerting/notification. This action will **NOT** be subject to specific time requirements.*

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

Criterion 5.a.2: [RESERVED]

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play:

Plans specify that simultaneous Route Alerting will occur for all municipalities for all siren activations. Each risk county will demonstrate route alerting on one route in one designated municipality. All other routes will be simulated. All routes should be established such that, in the event of a siren failure, the route will be covered within 45 minutes from the point at which a siren failure is detected.

In accordance with risk county and risk municipal RERPs, OROs conduct 100% route alerting in support of the Alert and Notification System. OROs with Route Alert responsibilities and that are not demonstrating Back-Up Route Alerting (5.a.3) will demonstrate this capability through interview.

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

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

ORO's should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include

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

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

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

PEMA Negotiated Extent of Play:

Subsequent emergency information and instructions should be provided to the public and the media in a timely manner. This will NOT be subject to specific time requirements. One media briefing will be demonstrated in each risk county.

Risk and Support Counties will receive and handle "Public Inquiry" messages via their individual "Public Inquiry" processes (In compliance with NIMS terminology, Rumor Control is now considered to be "Public Inquiry"). Counties will receive approximately ten (10) public inquiry calls from the State Exercise cell assigned this responsibility. Counties will be expected to receive and log the calls, identify any trends and take appropriate actions to include follow-up message development, distributions and/or briefings.

EVALUATION AREA 6

Support Operation/Facilities

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

INTENT

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

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

EXTENT OF PLAY

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

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

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could

include floor coverings, signs and appropriate means (for example, partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing and personal belongings to prevent further contamination of evacuees or facilities. In addition, for any individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

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

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

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

PEMA Negotiated Extent of Play:

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

To demonstrate the monitoring process, a minimum of six individuals posing as simulated evacuees should be monitored per monitoring facility. As an option, it will be acceptable to monitor one individual six times.

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

At each reception center, a minimum of three volunteer evacuees will be processed, briefed, issued the appropriate strip map or directions, and instructed to proceed to a mass care center designated for demonstration of monitoring, decontamination, and registration. A sample of the appropriate strip maps or directions will be made available for the demonstration. As negotiated with FEMA, this criterion will be demonstrated but not be evaluated because registration is not done at the reception center.

*One mass care center and one mass care monitoring/decontamination center will be demonstrated per support county during the out-of-sequence window county (**Exception** – Montour County does not operate any mass care centers). The support counties will provide space at designated mass care centers for operation of monitoring/decontamination centers. Schematics of these monitoring /decontamination centers will be available to show the organization within the facility and space management for monitoring and decontamination. Procedures will be demonstrated to evidence the separation of contaminated and non-contaminated (clean) individuals.*

At the evacuee monitoring/decontamination center, a minimum of six (6) volunteer evacuees will be monitored (or one volunteer evacuee may be monitored six times). Suitable radiological monitoring instruments will be issued to and demonstrated by the initial monitoring team(s). A monitoring team consists of one monitor and one recorder equipped with one survey instrument. Those individuals found to be free of “contamination”, based upon scenario injects, will be directed to the mass care registration point for further processing. Note: Actual radiological sources will not be attached to or hidden upon the volunteer evacuees. Note: If portal monitors are used, the Portal Monitor Extent of Play described below shall be used

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

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

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

Monitoring/decontamination centers and Emergency Worker monitoring and decontamination station personnel are not issued DRDs or KI since the centers and stations are outside the EPZ. Category "C" Dosimetry applies. Personal Record Dosimeters (PRD's) will be simulated.

Radiation readings / contamination data for the evacuees and vehicle will be provided by the controller as appropriate based upon information contained in the scenario package. Set-up of the facility will be performed the same as for an actual emergency with all route markings and contamination control measures in place including step-off pads. Long runs of plastic covered with paper will not be demonstrated, but the materials shall be available and explained. Positioning of a fire apparatus on-site may be simulated if otherwise required.

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play:

Emergency Worker locations will be evaluated on 10/06/10.

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

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

Sub-element 6.c - Temporary Care of Evacuees

INTENT

This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) demonstrate the capability to establish relocation centers in host areas. The American Red Cross (ARC) normally provides congregate care in support of OROs under existing letters of agreement.

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play:

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

Personnel, at a minimum, will consist of one manager and one assistant for each mass care center opened during the out-of-sequence window. The evaluator will expect to see sources and quantities of equipment and supplies as well as a staffing chart by job title for 24 hour staffing. Schematics of these mass care centers will be available, during the demonstration window, to show organization within the facility and space allocation for the registration and sheltering the evacuating public. Necessary signs, directional arrows and forms will be available and used to demonstrate registration, at a minimum, of three evacuees requiring emergency housing. Evacuees will be shown the location where they would be housed in an actual situation. Bedding, cots, food, etc. normally associated with mass care will not be moved to the site, but the sources of those items should be explained to FEMA evaluators. This out-of-sequence demonstration window will be from 7:00 PM – 9:30 PM on 10/6/2010.

American Red Cross support county chapters:

Wyoming County Chapter

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

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

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

EXTENT OF PLAY

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

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

Monitoring of the victim may be performed prior to transport, done 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.

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

PEMA Negotiated Extent of Play:

This sub element was demonstrated during a MS-1 Drill in October 2009.

Frequency for Evaluation of New Criteria

NOTE: This sub-element was evaluated at Susquehanna Health MS-1 on October 1, 2009.

ATTACHMENT A

Susquehanna Steam Electric Station 2010

Extent of Play Demonstration Tables

I. PLUME PHASE EXERCISE –

A. Activities – 10/05/2010

- 1. Risk Public School Districts with schools located within the EPZ and those districts situated outside the EPZ, but with students living within the EPZ, will participate and be evaluated by the Federal Emergency Management Agency. Each identified District Administration Office will be evaluated. When a school system is comprised of multiple buildings (High School, Middle School, Elementary School), the affected buildings (those with students from the EPZ) will be evaluated on a rotational basis to coincide with the six-year exercise cycle.**

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

COUNTY	SCHOOL DISTRICT	SCHOOL(s) participating in the 2010 exercise
Columbia	Berwick Area School District	Berwick High School and 14 th Street. Elementary
Columbia	Benton Area School District	Benton Area High School
Columbia	Bloomsburg Area School District	Bloomsburg Area High School
Columbia	Central Columbia School District	Central Columbia Middle School
Columbia	Columbia Montour AVTS (Vo-Tech)	Columbia Montour AVTS
Luzerne	Crestwood Area School District	Crestwood Area Middle School
Luzerne	Greater Nanticoke Area School District	Greater Nanticoke Elementary Center and J F Kennedy Elementary School
Luzerne	Hazleton Area School District	Valley Elementary School
Luzerne	Northwest Area School District	Hunlock Creek Elementary School

Luzerne	West Side Career & Technology Center	West Side C&TC
Luzerne	Wilkes Barre Career & Technology Center	Wilkes Barre C&TC

NOTE: Montour County EOC will be evaluated during this phase.

2. County Emergency Operations Centers (EOC's)

Time: Per Scenario

DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES (Plume Phase Exercise)		
COUNTY	DATE	Time
Columbia	10/05/10	04:00 p.m. – 10:30 p.m.
Luzerne	10/05/10	04:00 p.m. – 10:30 p.m.
Lackawanna	10/05/10	04:00 p.m. – 10:30 p.m.
Lycoming	10/05/10	04:00 p.m. – 10:30 p.m.
*Montour	10/05/10	09:00 a.m. – 11:00 a.m.
Northumberland	10/05/10	04:00 p.m. – 10:30 p.m.
**Schuylkill	10/05/10	04:00 p.m. – 10:30 p.m.
Union	10/05/10	04:00 p.m. – 10:30 p.m.
Wyoming	10/05/10	04:00 p.m. – 10:30 p.m.

* NOTE: Montour County EOC will be evaluated during the schools exercise on 10/05/10

**NOTE: Schuylkill County EOC will participate but has been granted exemption from evaluation by FEMA.

3. Municipal Emergency Operations Centers (EOC)

Time: 04:00 p.m. – 10:30 p.m. 10/5/10

NOTE: Only the agencies in BOLD will be evaluated for this exercise

DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES (Plume Phase Exercise)		
RISK COUNTY	MUNICIPALITY	DATE
Columbia	Beaver Township	
	Berwick Borough/ Briar Creek Borough*	10/5/10

	Briar Creek Township	
	Fishing Creek Township	
	Mifflin Township	
	North Centre Township	10/5/10
	South Centre Township	10/5/10
Luzerne	Black Creek Township	
	Butler Township/ Conyngham Borough*	
	Conyngham Township	10/5/10
	Dorrance Township	10/5/10
	Hollenback Township	10/5/10
	Hunlock Township	
	Huntington Township/ New Columbus Borough*	
	Nanticoke City	10/5/10
	Nescopeck Borough	
	Nescopeck Township	
	Newport Township	
	Nuangola Borough	
	Shickshinny Borough	
	Slocum Township	10/5/10
	Sugarloaf Township	
	Union Township	
	Salem Township	

* Joint EOC's

4. Route alerting will be demonstrated by one municipality in each risk county during scenario exercise.

Columbia	North Centre Township	10/5/10
Luzerne	Conyngham Township	10/5/10

5. Traffic and Access Control Points

- a. The Pennsylvania State Police will brief at the **PSP Bloomsburg Barracks**, Those attending the briefing will not actually deploy to the TCP/ACPs.
- b. The PSP briefing will be performed out of sequence in a demonstration window of **10:00 a.m. to 12:00 noon on Wednesday, 10/06/10**.
- c. Evaluated municipalities with a TCP assigned in its plan will demonstrate all preparation duties including TCP responsibilities and radiological briefing during the county/municipal plume exercise on the evening of 10/5/10. Dispatch of persons to the TCP site will not occur during the exercise. **For this exercise South Centre Township in Columbia County and Nanticoke City in Luzern County will be evaluated.**
- d. Municipal and county staffs will be prepared to brief the FEMA evaluator on actions to be taken should there be an impediment to evacuation on a designated route. This will be demonstrated anytime during the exercise.

B. October 6, 2010

1. Reception Centers (Out of Sequence)

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

COUNTY	Reception Center Location
Lackawanna	Big Lots, Scranton
Lycoming	Lycoming Mall, Pennsdale
Northumberland	Shikellemy High School, Sunbury
Schuylkill	Marion High School, Tamaqua
Union	Montandon Elementary School, Montandon
Wyoming	Tunkhannock Middle School, Tunkhannock

2. Mass Care Centers and Monitoring / Decontamination Centers
(Out of Sequence)

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

COUNTY	Mass Care Center Locations	
		Quantity
Lackawanna	Dunmore YMCA	1
Lycoming	Hughesville High School**	1
Northumberland	Shikellemy High School, Sunbury	1
Schuylkill	Marion High School	1
Union	Lewisburg High School	1
Wyoming	Tunkhannock Middle School Complex	1

** Hughesville High School is undergoing remodeling. Floor plan and school walk through will be provided however the equipment setup will occur outside or at another location.

3. Emergency Worker Monitoring / Decontamination Stations (Out of Sequence)
Time: 7:00 – 9:30 PM

Columbia	Columbia Montour Vo-Tech	10/6/10
Luzerne	Wright Township Fire Dept.	10/6/10

II. POST PLUME EXERCISE

Not Applicable for this Exercise. The Post-Plume Exercise was conducted in conjunction with the SSES 2004 exercise.

Attachment B
Listing of Prior Issues (Pennsylvania)

Reference #	FACILITY EVALUATED	CRITERIA	Current Status
	Areas Requiring Corrective Action		
1A	Berwick Borough/Briar Creek Borough Emergency Operations Center	63-08-3.b31-A-01	Open
2A	Berwick Borough/Briar Creek Borough Emergency Operations Center	63-08-3.c.2-A-02	Open
3A	Berwick Borough/Briar Creek Borough Route Alerting	63-08-5.a.3-A-03	Open
4A	Hunlock Township Emergency Operations Center	63-05-3.a.1-A-04	Re-demonstrated
	Planning Issues		
1P	Columbia County	63-08-3.c.2-P-04	Open

Areas Requiring Corrective Action

Reference 1A

Issue Number: 63-08-3.b.1-A-01

Condition: The Emergency Operations Center (EOC) received notification from the Columbia County EOC over the radio and telephone that Emergency Workers were to ingest potassium iodide (KI). However, these messages were not passed forward to the Emergency Management Coordinator.

Possible Cause: The Communication Officer (CO), who is stationed outside the main EOC room, apparently did not receive all messages.

References: NUREG-0654, J.10.e
Berwick/Briar Creek Borough Radiological Response Plan

Effect: Emergency workers in the 10-mile Emergency Planning Zone could have been exposed to radioactive iodine without the protection of KI.

Recommendation: The CO should be trained to obtain, log, and distribute all messages. The Emergency Management Coordinator should be kept informed about important messages affecting the emergency workers and the public.

Commonwealth Response: The Commonwealth agrees with the above recommendation. The Communications Officer will be provided additional training to obtain, log, and distribute all important messages and shall demonstrate during the next scheduled biennial exercise.

Reference 2A

Issue Number: 63-08-3.c.2-A-02

Condition: The Emergency Medical Services Representative did not provide Fire/Rescue personnel with contact information for all hearing impaired individuals for their use in route alerting and failed to notify or address other special needs individuals.

Possible Cause: The Medical Services Representative was not cognizant of his responsibilities with respect to special needs individuals.

References: NUREG-0654, J.10.c, d, g
Berwick/Briar Creek Borough Radiological Response Plan, V.E and X.F

Effect: Some hearing impaired and other special needs individuals, including visually impaired, wheelchair-bound, and transportation dependent individuals, might not have been alerted to the evacuation decision and would not have received timely transportation assistance.

Recommendation: The Medical Services Representative should receive training in the position's responsibilities and activities as specified in the Berwick/Briar Creek Borough Radiological Response Plan and standard operating procedures.

Commonwealth Response: The Commonwealth agrees with the above recommendation. The Emergency Medical Services Representatives will be retrained to ensure they are competent in the use of the Berwick/Briar Creek Borough Radiological Response Plan and standard operating procedures and shall demonstrate during the next scheduled biennial exercise.

Reference 3A

Issue Number: 63-08-5.a.3-A-03

Condition: The crew that demonstrated the Berwick Borough/Briar Creek Borough (BBC) backup alert route (Zone 1) ran the route simulating the use of the vehicle's siren, emergency lights and public address system. After completing the route, the crew was asked to demonstrate the vehicle's emergency notification equipment. The siren and emergency lights tests were satisfactory. However, the volume of the public address system was insufficient to provide adequate carrying power of the message. The volume was not much louder than ordinary conversation level. Several minutes were spent attempting to raise the volume without success. The crew was advised that if the volume could be raised, a re-demonstration could occur. Eventually, the BBC Emergency Management Director and the Fire/Rescue Officer were informed and agreed that the volume could not be improved.

Possible Cause: A mechanical malfunction within the public address system is the most likely cause.

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

Effect: Without sufficient volume, any emergency message delivered over the vehicle's public address system could not be understood at any distance beyond 30 feet of the truck. This could delay intended recipients from taking the proper course of action and might also lead to more confusion as to why the fire engine is passing by with lights on and intermittent siren soundings.

Recommendation: It is recommended that the BBC authorities correct the insufficient volume of the public address system.

Commonwealth Response: The Commonwealth agrees with the above recommendation. The mechanical malfunction within the public address system for this vehicle has been repaired and tested. This vehicle will be available for demonstration during the next scheduled biennial exercise.

Reference 4A

Issue Number: 63-08-3.a.1-A-04

Condition: The Hunlock Township Radiological Officer lacked sufficient knowledge to conduct the radiological briefing for emergency workers and did not have the “standardized” radiological briefing material provided by the Commonwealth of Pennsylvania. He was not knowledgeable on the use of the electronic dosimeters, did not know the correct exposure limits, and was unaware of the requirements and cautions regarding ingestion of potassium iodide (KI).

Possible Cause: The Radiological Officer was new and lacked familiarity with procedures regarding radiological exposure.

References: NUREG-0654, K.3.a; K.3.b
SOP-I (Radiological Protection Services Officer) of the Hunlock Township Radiological Emergency Response Plan of 1996, 2008 revision

Effect: Emergency workers were not informed of their exposure limits and the requirements and cautions regarding ingestion of KI.

Recommendation: Provide additional training to the Radiological Officer.

Corrective Action Demonstrated: The Radiological Officer was provided retraining regarding SOP-I and given an opportunity to read material associated with dosimetry and KI. He successfully re-demonstrated an adequate radiological briefing.

Planning Issues

Reference 1P

Columbia County

Issue Number: 63-08-3.c.2-P-04

Condition: The Columbia County RERP, Change 6, 2008 in Appendix 14, Attachment B indicates the Host School for the Salem Elementary School as being the Mahoney-Cooper Elementary School. The correct listing should be the Liberty Valley Elementary School, which is reflected in the Berwick School District's plans.

Possible Cause: Change was made a few years ago, and this portion of the Columbia County Plan was not changed to reflect this.

Reference: NUREG-0654, P.4

Effect: Possible confusion at Columbia County EOC about location of host school for the Salem Elementary School.

Recommendation: Update Columbia County RERP in Appendix 14, Attachment B to reflect current host school.

Corrective Action Demonstrated: A comprehensive review and revision of the Columbia County RERP was conducted during 2009. The plan was corrected with Mahoney-Cooper Elementary School being replaced with Liberty Valley Elementary School.

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