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FEMA

OCT 21 2004

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Operator Licensing, Human Performance,
and Plant Support Branch
Division of Inspection Program Management
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Weiss:

Enclosed is a copy of the final report for the May 19, 2004, out-of-sequence demonstrations and June 22, 2004, plume exposure pathway exercise of the offsite radiological emergency response plans site-specific for the Peach Bottom Atomic Power Station (PBAPS). This report addresses the evaluation of the plans and preparedness for the 10-mile Emergency Planning Zone. The Commonwealth of Pennsylvania was granted an exemption for their participation in the May 11, 2004, Beaver Valley Power Station Exercise. York County was granted an exemption for their participation in the April 22, 2003, Three Mile Island Nuclear Station Exercise; however, the risk counties of Chester and Lancaster and five risk municipalities from the three risk counties fully participated in the PBAPS exercise. The State of Maryland and risk counties of Cecil and Harford also participated in the PBAPS exercise.

One Deficiency and nine Areas Requiring Corrective Action (ARCA) were identified during this exercise. The Deficiency and five ARCAs were resolved during a remedial exercise, and one additional ARCA was resolved during a re-demonstration. FEMA Region III staff will monitor the status of the corrective actions.

Based on the results of the 2004 PBAPS exercise, FEMA finds that the offsite radiological emergency response plans and preparedness for the Commonwealth of Pennsylvania and the State of Maryland and the affected local jurisdictions are adequate to protect the public health and safety in the event of a radiological emergency at the site.

The final exercise report was prepared by the Federal Emergency Management Agency (FEMA), Region III' staff. A copy of the report will also be provided to the Commonwealth of Pennsylvania and State of Maryland. If you have any questions, please contact me at (215) 931-5546.

Sincerely,

Darrell Hammons, Chairperson
Regional Assistance Committee

Enclosure

FEMA

FINAL EXERCISE REPORT

PEACH BOTTOM ATOMIC POWER STATION
PLUME PHASE EXERCISE

Licensee:	**Exelon Nuclear**
Exercise Dates:	**May 19 and June 22, 2004**
Report Date:	**October 15, 2004**

FEDERAL EMERGENCY MANAGEMENT AGENCY
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I. EXECUTIVE SUMMARY

On May 19 and June 22, 2004, the Federal Emergency Management Agency (FEMA), Region III, conducted an exercise in the plume exposure pathway emergency planning zone (EPZ) around the Peach Bottom Atomic Power Station (PBAPS). The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The most recent previous exercise at this site was conducted on October 22 and November 19, 2002.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this exercise. The Commonwealth of Pennsylvania, its three risk counties (Chester, Lancaster, and York), and six risk municipalities (West Nottingham Township, East Drumore Township, Fulton Township, Martic Township, Delta/Peach Bottom Township, and Lower Chanceford Township) participated in the exercise. The State of Maryland and its two risk counties (Cecil and Harford) also participated.

FEMA also wishes to acknowledge the efforts of the many individuals that participated in the May 19, 2004, out-of-sequence demonstrations which included activities at three school districts in Pennsylvania, two school districts in Maryland; three reception centers in the Pennsylvania risk counties of Chester, Lancaster, and York and two reception centers in Maryland risk counties of Cecil and Harford; traffic and access control points in Harford County, Maryland and at the Pennsylvania State Police Barracks/York Barracks; and monitoring, decontamination, and congregate care activities in all three risk counties in Pennsylvania and in both risk counties in Maryland.

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 evaluation results from the out-of-sequence activities conducted on May 19 and the final evaluation results from the biennial exercise conducted on June 22, 2004.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. One deficiency, nine Areas Requiring Corrective Action (ARCAs), and seven planning issues were identified as a result of this exercise; five of the ARCAs identified occurred as a direct result of the deficiency assessed. One of the ARCAs identified was successfully resolved through redemonstration. In addition, the deficiency and five related ARCAs were successfully resolved during a remedial exercise conducted on September 16, 2004. Lastly, six prior issues and one prior planning issue were also evaluated during the exercise; all but one prior ARCA and the prior planning issue were successfully resolved during this exercise or the remedial exercise.

II. INTRODUCTION

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

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of RERPs and procedures developed by State and local governments;

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

- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (44 CFR Part 354, Appendix A, September 14, 1993); and

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

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

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

The Commonwealth of Pennsylvania, State of Maryland, and involved local jurisdictions have not formally submitted their RERPs for the PBAPS to FEMA Region III for 44 CFR 350 approval.

FEMA Region III conducted a joint REP exercise on May 19 and June 22, 2004, to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the PBAPS. Out-of-sequence demonstrations of monitoring/decontamination centers, reception centers, congregate care centers, and schools were conducted on May 19, 2004. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (OROs) during a simulated radiological emergency.

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

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

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

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

Section IV of this report, entitled "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise evaluation areas at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains: (1) descriptions of all Deficiencies and ARCAs assessed during this exercise, recommended corrective actions, and the State and local governments' schedule of corrective actions for each identified exercise issue, and (2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the May 19, 2004, out-of-sequence demonstrations and June 22, 2004, full-scale REP exercise to test the offsite emergency response capabilities in the area surrounding the PBAPS. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the actual time of occurrence of key exercise events and activities.

A. Plume Emergency Planning Zone Description

Exelon Nuclear owns and operates the PBAPS. The station consists of one 40-megawatt (MW), high-temperature, gas-cooled reactor (Unit 1), decommissioned in October 1974, and two operating boiling water reactors (Units 2 and 3) rated at 1,065 MW per unit. The operating licenses for the facility were granted in October 1973 (Unit 2) and July 1974 (Unit 3); commercial operation began at the site in July 1974 (Unit 2) and December 1974 (Unit 3).

The coordinates of the plant site are 39°45'32" north (latitude) by 76°16'9" west (longitude). The site consists of 620 acres located on the west shore of Conowingo Pond, a reservoir formed by the backwater of the Conowingo Dam on the Susquehanna River. The site is primarily in Peach Bottom Township, York County, Pennsylvania; a small portion of the property lies in Lancaster County in southeastern Pennsylvania near the mouth of Rock Run Creek. The minimum exclusion distance (distance from the center point of the reactor vessel to the site area boundary) specified for the PBAPS is 2,700 feet. Exelon Nuclear owns all the land within the exclusion area; there are no private residences on site.

The plant is located about 38 miles north-northeast of Baltimore, Maryland; 45 miles southeast of Harrisburg, Pennsylvania; and 20 miles south-southeast of Lancaster, Pennsylvania. The nearest communities are Delta, Pennsylvania, and Cardiff, Maryland, which are located approximately four and five miles west-southwest of the site, respectively. There are 97 sirens providing coverage for the 10-mile EPZ; 65 are in Pennsylvania.

Soils of the Manor-Glenelg Association predominate in the site area. These soils, which are generally underlain by schist or phyllite, are shallow to moderately deep and are found on moderate to very steep slopes. The general topography of the site is hilly, with elevations ranging from 110 feet to over 460 feet above mean sea level (MSL); the plant is 116 feet above MSL. The site is characterized by broad ridge tops and steep hillsides along the river.

The climate in this area of York County is mild but humid. Prevailing winds are from the west. The average rainfall is approximately 40.5 inches, and the average annual temperature is 52.8° Farenheit.

The area in the immediate vicinity of the plant is mostly agricultural. There are no commercial airports within a 10-mile radius. The closest major airport is in Harrisburg, about 50 miles

northwest of the site. A smaller airport servicing commuter and private aircraft is located in Lancaster, about 25 miles north of the site. No public highways pass through the plant, and no major arterial highways pass near it. Access to the plant is by two roads: one, from the nearby town of Delta, leads to the decommissioned Unit 1 area and Information Center; the other passes north of Delta and enters the plant area near Units 2 and 3.

The 10-mile EPZ for PBAPS, with a total risk population of approximately 57,645, covers the following jurisdictions:

- Chester County, Pennsylvania
  - West Nottingham Township

- Lancaster County, Pennsylvania
  - Drumore Township
  - East Drumore Township
  - Fulton Township
  - Little Britain Township
  - Martic Township
  - Providence Township
  - Quarryville Borough

- York County, Pennsylvania
  - Delta Borough
  - Peach Bottom Township
  - Fawn Township
  - Fawn Grove Borough
  - Lower Chanceford Township

- Cecil County, Maryland

- Harford County, Maryland

B. Exercise Participants

The following agencies, organizations, and units of government participated in the PBAPS out-of-sequence demonstrations and REP exercise held on and May 19 and June 22, 2004, respectively.

Federal Agencies

Aberdeen Proving Ground
United States Coast Guard
United States Department of Agriculture

Commonwealth of Pennsylvania

Pennsylvania Department of Transportation
Pennsylvania Emergency Management Agency
Pennsylvania National Guard
Pennsylvania Army National Guard – Spring City
Pennsylvania State Agriculture Cooperative Extension
Pennsylvania State Police

Pennsylvania Risk Jurisdictions

Chester County

Chester County Board of Commissioners
Chester County Department of Emergency Services
Chester County Department of Information Services, Geographical Information Systems
Chester County Facilities
Chester County Telecommunications

West Nottingham Township

Union Fire Company
West Nottingham Township Constable
West Nottingham Township Department of Public Works
West Nottingham Township Elected Officials of the Board of Supervisors
West Nottingham Township Emergency Management Agency
West Nottingham Township Fire Department
West Nottingham Township Police Department

Lancaster County

Lancaster County Commissioners
Lancaster County Emergency Management Agency
Lancaster County Fire Services
Lancaster County Sheriff's Office

East Drumore Township

East Drumore Township Emergency Management
East Drumore Township Police/Fire/EMS
East Drumore Township Public Works

Fulton Township

Fulton Township Board of Supervisors
Fulton Township Emergency Management
Fulton Township Public Works

Martic Township

Martic Township Board of Supervisors
Pequea Fire Company
Rawlinsville Fire Company
Wilderness Emergency Strike Team

York County

Brogue Fire Company
Eureka Fire Company
York County Emergency Management Agency
York County Hazmat Team

Lower Chanceford Township

Lower Chanceford Township Board of Supervisors

Delta Borough/Peach Bottom Township

Delta Borough/Peach Bottom Township Administrative Support Personnel
Delta Borough/Peach Bottom Township Communications
Delta Borough/Peach Bottom Township Emergency Management Coordinator
Delta Borough/Peach Bottom Township Emergency Medical Services
Delta Borough/Peach Bottom Township Fire Services
Delta Borough/Peach Bottom Township Police Services
Delta Borough/Peach Bottom Township Public Works
Delta Borough/Peach Bottom Township Radiological Protection
Delta Borough/Peach Bottom Township Town Board of Supervisors
Delta Borough/Peach Bottom Township Transportation

Pennsylvania Schools

Chester County

Oxford Area School District
Penns Grove High School

Lancaster County

Penn Manor School District
Martic Elementary School
Solanco School District
Swift Middle School

York County

Red Lion Area School District
Chancerford Elementary School
Southeastern School District
Delta/Peach Bottom Elementary School

State of Maryland

Baltimore County Health Department
Calvert County Emergency Management
Maryland Cooperative Extension, Agriculture
Maryland Department of Agriculture
Maryland Department of Education
Maryland Department of Environment
Maryland Department of Health and Mental Hygiene
Maryland Department of Human Resources
Maryland Department of Natural Resources
Maryland Department of Public Safety and Correctional Services
Maryland Department of Transportation
Maryland Emergency Management Agency
Maryland Institute of Emergency Medical Services Systems
Maryland Insurance Administration
Maryland State Police
Maryland State Highway Administration
University of Maryland

Maryland Risk Jurisdictions

Cecil County

Cecil County Department of Emergency Services
Cecil County Department of Public Works
Cecil County Department of Social Services
Cecil County Emergency Medical Services
Cecil County Facility Maintenance
Cecil County Fire and Rescue
Cecil County Health Department
Cecil County Public Schools, Administration

Cecil County Public Schools, Transportation
Cecil County Sheriff's Department

Harford County

Harford County Cable Network
Harford County Community Service
Harford County Department of Emergency Communications
Harford County Department of Emergency Operations
Harford County Department of Housing
Harford County Department of Social Services
Harford County Department of Public Works
Harford County Department of Parks & Recreation
Harford County Executive Office
Harford County Fire/Emergency Medical Services
Harford County Human Resources
Harford County Message Center
Harford County Office of Governmental and Community Relations
Harford County Office of Information Systems
Harford County Public Information Office
Harford County Schools
Harford County Sheriff's Office
Harford County Transportation
Harford County Water & Sewer

Maryland Schools

Cecil County

Cecil County School District
Conowingo Elementary School

Harford County

Harford County School District
Darlington Elementary School
Dublin Elementary School
Harford Christian School

Private/Volunteer Organizations

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

Airville Volunteer Fire Company
Amateur Radio Emergency Service (ARES)
American Red Cross
Baltimore Gas & Electric
Boy Scout Troop 777, Bel Air, MD
Connective Power
Constellation Energy
Delta Cardiff Volunteer Ambulance Division
Delta Cardiff Volunteer Fire Department
Exelon Nuclear
Harford Races Office
Radio Amateur Civil Emergency Service (RACES)
Robert Fulton Volunteer Fire Department
Upper Chesapeake Medical Center
Verizon Telephone

C. Exercise Timeline

Table 1, on the following page, presents the times at which key events and activities occurred during the PBAPS June 22, 2004, full-scale, plume pathway REP exercise. Also included are times notifications were made to the participating jurisdictions/functional entities.

TABLE 1. EXERCISE TIMELINE
PENNSYVANIA
DATE AND SITE: *June 22, 2004 – Peach Bottom Atomic Power Station*

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken								
		Chester County EOC	West Nottingham Township EOC	Lancaster County EOC	East Drumore Township EOC	Fulton Township EOC	Martic Township EOC	York County	Delta/Peach Bottom Township EOC	Lower Chanceford Township EOC
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	1640	1650	1723	1658	1710	1709	1705	1654	1710	1722
Site Area Emergency	1848	1856	1901	1856	1905	1905	1904	1853	1915	2009
General Emergency	2019	2030	2036	2032	2047	2045	2037	2046	2100	2047
Simulated Radiation Release Started	2022	2059	2055	2059	2108	2100	2108	2107	N/R	N/R
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational	N/A	1713	1801	1816	1719	1811	1808	1737	*1823	1840
Governor's Declaration of State of Emergency	2058	2104	2105	2102	2102	2108	2108	2107	2119	2120
Local Declaration of State of Emergency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Exercise Terminated	N/A	2133	2135	2147	2152	2147	2149	2143	2147	2147
Early Precautionary Actions: Place animals on stored food and water		1917	2005	1928	2012	2000	2016	1917	1938	1936
1st A&N Decision (State [made]; local [received]) General information about evolving emergency		1918	1926	1917	2010	2010	2010	1923	1923	N/R
1st Siren Activation		1920	N/A	1920	N/A	N/A	N/A	1920	N/A	N/A
1st EAS Message		1926	N/A	1928	N/A	N/A	N/A	1929	N/A	N/A
2nd A&N Decision (State [made]; local [received]) Shelter: None Evacuate: 10-mile, 360 degrees		2050	2055	2055	2102	2103	2102	2052	2056	2105
2nd Siren Activation		2055	2055	2055	N/A	N/A	N/A	2055	N/A	N/A
2nd EAS Message		2058	2055	2058	N/A	N/A	N/A	2058	N/A	N/A
KI Decision: Emergency Workers Advised NOT to take KI		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KI Decision: Emergency Workers Advised to take KI		2030	2055	2101	2122	2122	2109	2050	2051	2100
KI Decision: General Public Advised NOT to take KI		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KI Decision: General Public Advised to take KI		2050	2055	2101	2122	2111	2116	2050	2100	2100

N/A – Not Applicable
N/R – Not Reported
* Not fully staffed – partially operational

TABLE 1. EXERCISE TIMELINE
MARYLAND
DATE AND SITE: *June 22, 2004 – Peach Bottom Atomic Power Station*

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken				
		MD State EOC	Accident Assessment Center	EOF	Cecil County EOC	Harford County EOC
Unusual Event	1555	1603	1622	1605	1610	1605
Alert	1640	1653	1655	1646	1651	1655
Site Area Emergency	1848	1859	1913	1848	1856	1856
General Emergency	2019	2039	2046	2019	2037	2030
Simulated Radiation Release Started (offsite)	N/A	2059	2107	2022	2119	2059
Simulated Radiation Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1921	1730	1740	1733	1741
Governor's Declaration of State of Emergency		2107	2109	2109	2109	2112
Local Declaration of State of Emergency		N/A	N/A	N/A	N/A	N/A
Exercise Terminated		2204	2155	2143	2200	2145
Early Precautionary Actions: Place animals on stored feed and water		1913	1918	1920	1920	1920
1st A&N Decision (State [made]; local [received]) Shelter: Shelter livestock, administer KI to EWs, and stay tuned to EAS.		1910	1913	2103	1913	1913
1st Siren Activation		1920	N/R	2103	1920	1920
1st EAS Message		1923	N/R	2103	1923	1923
2nd A&N Decision (State [made]; local [received]) Shelter: Sub-area 7. Evacuate: Sub-area 6.		2045	N/R	N/R	2054	2049
2nd Siren Activation		2101	N/R	N/R	2101	2101
2nd EAS Message		2104	N/R	N/R	2104	2104
KI Decision: Emergency Workers Advised NOT to take KI		N/A	N/A	N/A	N/A	N/A
KI Decision: Emergency Workers Advised to take KI		1913	1913	N/R	1913	1918
KI Decision: General Public Advised NOT to take KI		N/A	N/A	N/A	N/A	N/A
KI Decision: General Public Advised to take KI		2054	2054	N/R	2054	2054

N/A -- Not Applicable
N/R -- Not Reported

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and locations that participated in the May 19, 2004, out-of-sequence demonstrations and the June 22, 2004, full-scale REP exercise to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the PBAPS.

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

A. Summary Results of Exercise Evaluation

The matrix shown in Table 2, on the following pages, presents the status of the exercise evaluation area criteria from the FEMA REP Exercise Evaluation Methodology that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise evaluation area criteria are listed by number and the demonstration status of the criteria is indicated by the use of the following letters:

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

D Deficiency assessed

D^1 Deficiency assessed, but successfully redemonstrated

A ARCA(s) assessed

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

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: *June 22, 2004 – Peach Bottom Atomic Power Station*

#	OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
		1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
1	**COMMONWEALTH OF PENNSYLVANIA**																																	
1.1	Pennsylvania EOC																																	
1.2*	State Police Barracks – York Barracks TCPs*				M	M							M	M			M	M																
2	**PENNSYLVANIA RISK JURISDICTIONS**																																	
2.1	**Chester County**																																	
2.1.1	Chester Co. EOC	M	M	M	M	M	M			M			M	M	M		M	M									M			M				
2.1.2*	Reception Center-Octorara MS*					M							M																		M			
2.1.3*	Monit./Decon. And Mass Care-Octorara HS*					M							M																		M		M	
2.1.4*	Emergency Worker Monit./Decon.-Penns Grove MS*					M							M																		M	M		
2.1.5	West Nottingham Township EOC	M		M	M	M	M			M			M	M	M		M	M									M							
2.1.6	West Nottingham Township Route Alerting (hearing impaired)				M	M							M	M	M												M							
2.2	**Lancaster County**																																	
2.2.1	Lancaster County EOC	M		M	M	M	M			M			M	M	M		M	M									M			M				
2.2.2*	Reception Center-Willow Street Vo-Tech School*					M							M																		M			
2.2.3*	Monit./Decon. And Mass Care-Lampeter Strasburg School Complex (Field House)*					M							M																		M		M	
2.2.4*	Emergency Worker Monit./Decon.-Lampeter Strasburg School Complex (Field House)*					M							M																		M	M		
2.2.5	East Drumore Township EOC	M	M	M	M	M	M			M			M	M	M		M	M																
2.2.6	Fulton Township EOC	M	M	M	M	M	M			M			M	M	M		M	M																
2.2.7	Martic Twp. EOC	M	M	M	M	M	M			M			M	M	M		M	M									M							
2.2.8	Martic Township Route Alerting				M	M							M	M	M												M							

LEGEND:

M = Met (no Deficiency or ARCA(s) assessed)
Blank = Not scheduled for demonstration
* Out-of-sequence (5/19/04)

A = ARCA(s) assessed (not affecting health and safety of public)
A¹ = ARCA(s) assessed, but successfully redemonstrated
D¹ = Deficiency assessed, but successfully redemonstrated

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: *June 22, 2004 – Peach Bottom Atomic Power Station*

#	OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
		1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
2.3	**York County**																																	
2.3.1	York County EOC																																	
2.3.2*	Reception Center - Southern School Complex MS*					M							M																		A			
2.3.3*	Monit./Decon. and Mass Care-Southern School Complex HS*					M							M																		M		M	
2.3.4*	Emergency Worker Monit./Decon.- Stewartstown Fire Co.*					M							M																		M	M		
2.3.5	Delta Borough/Peach Bottom Township EOC	D[1]	M	M	M	M	A[1]			M			A[1]	A[1]	M		M	M									A[1]							
2.3.6	Delta Borough/Peach Bottom Township Route Alerting (Hearing Impaired)				M	M							M	M	M												A[1]							
2.3.7	Lower Chanceford Township EOC	M		M	M	M	M			M			M	M	M		M	M																
	PENNSYLVANIA SCHOOLS																																	
3.1	**Chester County**																																	
3.1.1*	Oxford Area SD-Penns Grove HS*															M																		
3.2	**Lancaster County**																																	
3.2.1*	Penn Manor SD-Martic ES*															M																		
3.2.2*	Solanco SD-Swift MS*															M																		
3.3	**York County**																																	
3.3.1*	Red Lion Area SD-Chanceford ES*															M																		
3.3.2*	Southeastern SD-Delta/Peach Bottom ES*															M																		

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

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: *June 22, 2004, Peach Bottom Atomic Power Station*

#	OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MGMT.					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEAS. & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPNS FACILITIES			
		1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
4.0	**STATE OF MARYLAND**																																	
4.1	Maryland EOC	M		M	M	M	M	M	M	M							M										M			M				
4.2	Accident Assessment Center (MDE)	M		M	M	M	M	M															M											
4.3	EOF (Cotsville, PA)				M	M		M																										
4.4	Emergency News Center																													M				
4.5	State Field Monitoring Team A				M	M							M	M								M		M										
4.6	State Field Monitoring Team B				M	M							M	M								M		M										
5.0	**MARYLAND RISK JURISDICTIONS**																																	
5.1	**Cecil County**																																	
5.1.1	**Cecil County EOC**	M		M	M	M	M	M	M	M			M	M	M	M	M	M									M		M	M				
5.1.2*	Reception Center and Monit./Decon.-Perryville HS*												M																		A			
5.1.3	Emergency Worker Monit./Decon.-Perryville HS*												M																		A[1]	M		
5.1.4*	Congregate Care-Perryville HS*		M																														M	
5.1.5	Traffic and Access Control Point				M	M							M	M			M	M																
5.2	**Hartford County**																																	
5.2.1	**Harford County EOC**	M		M	M	M	M	M	M	M			M	M	M	M	M	M									M		M	M				
5.2.2	Harford Media Center	M	M		M	M																								M				
5.2.3*	Reception Center and Monit./Decon.-Fallston HS*												M																		M			
5.2.4*	Emergency Worker Monit./Decon.-Fallston HS*												M																		M			
5.2.5*	Congregate Care-Fallston HS*		M																														M	
5.2.6*	Traffic and Access Control Point*				M	M							M	M			M	M																
6.0	**MARYLAND SCHOOLS**																																	
6.1	**Cecil County Public SD**																																	
6.1.1*	Conowingo ES															M																		
6.2	**Harford County Public SD**																																	
6.2.1*	North Harford ES															M																		
6.2.2*	North Harford MS															M																		
6.2.3*	North Harford HS															M																		

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

B. Status of Jurisdictions Evaluated

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

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

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

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

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

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

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

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

- A **Deficiency** is defined in the FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

- An **ARCA** is defined in the FEMA-REP-14 as "...an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

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

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

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

1. **Commonwealth of Pennsylvania**

1.1 **State Emergency Operations Center (Observed)**

a. **MET:** N/A

b. **DEFICIENCY:** N/A

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

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

e. **PRIOR ARCAs – RESOLVED:** 1

Issue: 46-96-13-A-01 (5.b.1)

Description: Information did not flow from the Rumor Control Center, located in another State building, to the State Media Center in the EOC. The staff in the media center had no knowledge of the types of inquiries received in the Rumor Control Center. There was no system to notify media center personnel of significant issues or developing trends. This could impede efforts to control the spread of rumors that could have an adverse effect on the public. (NUREG-0654, G.4.a, c)

Corrective Action Demonstrated: This issue was successfully resolved during the Pennsylvania Ingestion Exercise in May 2004 for Beaver Valley.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

1.2 **State Police Barracks – York Barracks – Traffic Control Points**

a. **MET:**

1.d.1	3.a.1
1.e.1	3.b.1
	3.d.1
	3.d.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2. Pennsylvania Risk Jurisdictions

2.1 Chester County

2.1.1 Chester County Emergency Operations Center

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.2 Reception Center – Octorara Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.3 Evacuee Monitoring/Decontamination and Mass Care Center – Octorara High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.4 Emergency Worker Monitoring/Decontamination Center – Penns Grove Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 2

Issue No.: 46-96-22-A-10 (3.a.1)

Description: The following issues were identified during emergency worker monitoring and decontamination activities.

- Pomeroy Fire Department, Cochranville Fire Department, and emergency worker decontamination personnel were not aware of the maximum exposure limit (5 rem) for their mission. They were also uncertain of the difference between personal exposure limits and the radiation level required for an individual to be decontaminated.

- Although not required by the extent-of-play agreement, the Pomeroy Fire Company used two DRDs to monitor exposure. However, the dosimetry was placed in a precarious position where it could have been damaged. (NUREG-0654, K.3.b, K.4, and K.5.b)

Administratively Resolved: The Pomeroy Fire Department no longer exists and has been removed from the Chester County Emergency Plan.

Issue No.: 46-96-22-A-12 (6.a.1)

Description: The Pomeroy Fire Department personnel set up a facility to simulate the decontamination of one individual during the exercise. The following problems were identified during the demonstration:

- The route set aside for contaminated workers did not allow access to sinks, only to the shower, so an individual with contamination only on his/her hand would be required to go into a multiple shower area.

- There was no way a "clean" individual could have exited the shower after washing without crossing a contaminated area in bare feet.)

- No proper storage equipment had been set up to receive contaminated clothing. The plan calls for plastic trash bags in a metal or plastic sealable garbage container. Plastic bags were on hand but no outer container was available.

- Sufficient towels and soap were not available for decontamination of emergency workers. The fire company had only two small towels and a travel bottle of shampoo. The workers indicated that there might be more supplies in their ambulance, which was not at the site.

- There were no articles of replacement clothing for workers whose clothing was contaminated.

- No mechanism was provided for decontamination of personal items that might be contaminated, such as purses, wallets, glasses, rings, or watches. (NUREG-0654, K.5.a, b)

Administratively Resolved: The Pomeroy Fire Department no longer exists and has been removed from the Chester County Emergency Plan.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.5 West Nottingham Township Emergency Operations Center

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 2

Issue: 46-02-3.b.1-A-01

Description: The West Nottingham Township route alert teams in the field did not receive notification of the decision to ingest potassium iodide (KI) from the Chester County Emergency Operations Center (EOC) as requested by the West Nottingham Township EOC. (NUREG-0654, J.10.e)

Corrective Action Demonstrated: The instruction to ingest KI was received at 2055; however, the Route Alerting Team had already completed their route. The instructions to ingest KI as stated by the Radiological Officer (RO) would have been radioed to the Route Alert Team in the field.

Issue: 46-02-3.c.1-A-02

Description: The actual initial contact with the hearing-impaired population was not demonstrated in West Nottingham Township at the Alert Emergency Classification Level (ECL) as required by the Township's Radiological Emergency Response Plan (RERP) and the extent-of-play agreement. Documentation does not exist for the actual or simulated contact of hearing-impaired individuals to assess their status as to whether they would need special notification if sirens were sounded and protective actions were necessary. When the sirens were activated, the hearing-impaired alert team was not dispatched until the West Nottingham Township Emergency Operations Center (EOC) was specifically instructed to perform this function by the Chester County EOC. (NUREG-0654, II.E.5)

Corrective Action Demonstrated: At 1915, the Emergency Medical Services (EMS) officer was instructed by the Emergency Management Coordinator to follow procedures and to contact the individuals on the township special needs list. There were five hearing-impaired individuals in the township. The EMS officer contacted four of the hearing-impaired households by telephone through another hearing capable person in the home but was unable to contact the fifth.

At 1930, a two-person route alert team was dispatched. At 1943, the team arrived at the address of the individual the EMS officer had been unable to contact.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.1.6 West Nottingham Township Route Alerting (Hearing Impaired)

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2 Lancaster County

2.2.1 Lancaster County Emergency Operations Center

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

g. **PRIOR PLANNING ISSUE – UNRESOLVED:** 1

Issue: 46-02-3.e.2-P-01

Description: The Lancaster County Radiological Emergency Response Plan Annex E, Appendix 15, Ingestion Exposure Pathway Emergency Planning Zone, is not current. The Annex references the U.S. Food and Drug Administration (FDA) 1982 protective action guidelines (PAGs) and other dated information. According to FEMA HQ guidance, plans were to be updated by April 2000 with the new FDA guidance, dated August 13, 1998, and entitled, "Accidental Radioactive Contamination of Human Food

and Animal Feeds: Recommendations for State and Local Agencies," including the changes to Derived Intervention Levels (DILs). (NUREG-0654, p. 4)

Reason Issue Unresolved: Plans have not been updated to include the new FDA August 13, 1998, guidance.

Recommendation: Update the plans to include the new FDA August 13, 1998, guidance.

State Response: County plans will be updated to address the new FDA Guidance.

2.2.2 Reception Center – Willow Street Vocational-Technical School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.3 Evacuee Monitoring/Decontamination and Mass Care Center – Lampeter Strasburg School Complex (Field House)

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.4 Evacuee Monitoring/Decontamination and Mass Care Center – Lampeter Strasburg School Complex (Field House)

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.5 East Drumore Township Emergency Operations Center

a. **MET:**

1.a.1	2.a.1	3.a.1
1.b.1	2.c.1	3.b.1
1.c.1		3.c.1
1.d.1		3.d.1
1.e.1		3.d.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue: 46-96-30-A-18 (1.a.1)

Description: The East Drumore Township EOC did not perform a shift change, as required by the extent-of-play agreement. (NUREG-0654, A.4; N.1.a)

Corrective Action Demonstrated: A current personnel roster was available at the Township Emergency Operating Facility. The roster listed persons assigned to man multiple shifts for 24-hour staffing.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.6 Fulton Township Emergency Operations Center

a. **MET:**

1.a.1	2.a.1	3.a.1
1.b.1	2.c.1	3.b.1
1.c.1		3.c.1
1.d.1		3.d.1
1.e.1		3.d.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.7 Martic Township Emergency Operations Center

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.2.8 Martic Township Route Alerting

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.3 York County

2.3.1 York County Emergency Operations Center (Observed)

a. **MET:** N/A

b. **DEFICIENCY:** N/A

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

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

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.2 Reception Center – Southern School Complex (Susquehannock Middle School)

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

b. **DEFICIENCY:** None

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

Issue: 46-04-6.a.1-A-01

Condition: Evacuees exiting the shower rooms used the same floor area, which was previously used by contaminated individuals.

Possible Cause: There were no floor diagrams, which would show the clean versus contaminated evacuees' traffic pattern.

Reference: NUREG-0654, J.12

Effect: Clean evacuees exiting shower rooms could be contaminated again by using the same floor area as contaminated evacuees.

Recommendation: Prepare drawings of the monitoring area and locker rooms with showers. Clearly designate a traffic pattern for clean and possibly contaminated evacuees.. Make proper use of tape on the floor and cones, tapes and step-off pads.

State Response: Plans and procedures will be revised and training will be conducted. This "Area Requiring Corrective Action" will be demonstrated during the next scheduled Peach Bottom Atomic Power Station exercise.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.3.3 Evacuee Monitoring/Decontamination and Mass Care Center – Southern School Complex (Susquehannock High School)

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.3.4 Emergency Worker Monitoring/Decontamination Center – Stewartstown Fire Company

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.3.5 Delta Borough/Peach Bottom Township Emergency Operations Center

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

b. **DEFICIENCY:** 1

Issue: 46-04-1.a.1-D-01

Condition: The following "Key Staff" members did not respond to the callout telephone calls made by the Emergency Management Coordinator (EMC): Radiological Officer (RO), Communications Officer (CO), Public Works Officer (PWO), Police Services Officer (PSO), and Transportation Officer (TO). There were only three key officers who responded to the callout, including the EMC, Fire Services Officer (FSO), and Emergency Medical Services Officer (EMSO). There was an insufficient number of emergency responders to staff teams for deployment to notify the hearing impaired or to perform route alerting, if required. Neither Potassium Iodide (KI) nor dosimetry was issued to the emergency workers or Emergency Operations Center (EOC) staff. Dosimetry/KI forms were not completed during the exercise. A radiological briefing for emergency workers was not conducted due to the lack of an RO.

Possible Cause: Insufficient key and non-key personnel to staff the EOC and route alerting teams.

Reference: NUREG-0654, A.4; D.3; E.1; H.4; K.3.a, b, K.4; J.10.e,f

Effect: The Delta Borough/Peach Bottom Township EOC was not declared fully operational during the exercise. The emergency plan could not be implemented with the number of emergency responders present in the EOC.

Recommendation: Train additional key staff members to ensure that there will be sufficient number of personnel to respond to an emergency.

State Response: Additional training will be conducted. A remedial exercise for the purpose of re-demonstration is scheduled for the evening of September 16, 2004.

Corrective Action Demonstrated: During a remedial exercise conducted on September 16, 2004, key staff were notified by the Emergency Management Coordinator (EMC) via telephone of the Alert ECL declared by the Peach Bottom Atomic Power Station. Delta Borough/Peach Bottom Township EOC key staff that mobilized to the EOC included the EMC,

Communications Officer, Fire Services Officer, Police Services Officer, Transportation Officer, Radiological Officer, Public Works Officer, and the Emergency Services Officer. Emergency workers were briefed by the Radiological Officer on dosimetry and potassium iodide (KI), and were issued appropriate dosimetry and KI. Dosimety/KI forms were completed prior to the emergency workers notification of the hearing impaired through route alerting by the Emergency Medical Services Officers.

c. **AREAS REQUIRING CORRECTIVE ACTION:** 2.a.1, 3.a.1, 3.b.1, and 5.a.1. The issues identified within each criteria have been incorporated into 46-04-1.a.1-D-01, found in Subsection 2.3.5.b above, and were successfully demonstrated during a remedial exercise conducted on September 16, 2004.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue: 46-96-01-A-24 (1.a.1)

Description: The roster of personnel for the Delta Borough/Peach Bottom Township EOC shows the radiological officer as a "Key Staff" member (Township Plan Appendix A). The radiological officer could not be contacted when the Alert ECL was issued and his deputy was at work and not available. Consequently, the EMC had to assume the duties of the radiological officer and train another individual. This activity detracted from his other duties. (NUREG-0654, A.4; E.2)

State Response: Additional training will be conducted. A remedial exercise for the purpose of re-demonstration is scheduled for the evening of September 16, 2004.

Corrective Action Demonstrated: After notification of the Alert ECL by the EMC, the Radiological Officer mobilized to the EOC and performed her duties during the remedial exercise on September 16, 2004.

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.3.6 Delta Borough/Peach Bottom Township Route Alerting (Hearing Impaired)

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

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** 5.a.1. The issue identified within this criteria has been incorporated into 46-04-1.a.1-D-01,

found in Subsection 2.3.5.b above. See corrective action listed under 46-04-1.a.1-D-01.

State Response: A remedial exercise for the purpose of re-demonstration is scheduled for the evening of September 16, 2004.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

2.3.7 Lower Chancerford Township Route

a. **MET:**

1.a.1	2.a.1	3.a.1
1.c.1	2.c.1	3.b.1
1.d.1		3.c.1
1.e.1		3.d.1
		3.d.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

3. **Pennsylvania Schools**

3.1 **Chester County**

3.1.1 **Oxford Area School District – Penns Grove High School**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.2 **Lancaster County**

3.2.1 **Penn Manor School District – Martic Elementary School**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.2.2 **Solanco School District – Swift Middle School**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.3 York County

3.3.1 Red Lion Area School District – Chanceford Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

3.3.2 Southeastern School District – Delta/Peach Bottom Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

4. State of Maryland

4.1 Maryland Emergency Operations Center

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.2 Accident Assessment Center (MDE)

a. **MET:**

1.a.1	2.a.1	4.a.2
1.c.1	2.b.1	
1.d.1		
1.e.1		

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.3 Emergency Operations Facility (Coatesville, PA)

a. **MET:**

1.d.1
1.e.1
2.b.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.4 **Emergency News Center**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.5 **State Field Monitoring Team A**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

4.6 **State Field Monitoring Team B**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5. Maryland Risk Jurisdictions

5.1 Cecil County

5.1.1 Cecil County Emergency Operations Center

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.1.2 Reception and Evacuee Monitoring/Decontamination Center – Perryville High School

a. **MET:** 3.a.1

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** 2

Issue: 46-04-6.a.1-A-02

Condition: Improper use of the portal monitor was observed. After alarming the portal monitor the first time, the evacuee was directed to take one step back and pass through the portal a second time for verification of contamination.

Procedures for the setup and proper use of the portal monitor are not included in the Standard Operating Procedures for the Perryville High School Monitoring and Decontamination Center for evacuees.

Possible Cause: The use of the portal monitor is a relatively new piece of equipment for Cecil County and the lack of a procedure on the proper use in

the Standard Operating Procedures for Cecil County impacted the demonstration.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: The lack of a detailed procedure caused some confusion and understanding in its proper use.

The condition described above does not allow the portal monitor to acquire a new natural background or provide an accurate indication of contamination.

The potentially contaminated individual would influence the background and potentially not alarm a second time, therefore allowing a potentially contaminated individual to join the "clean" general population located in the shelter creating a cross contamination issue.

Recommendation: It is recommended that portal monitor procedures be developed. The procedure should include the actions to be taken when an alarm or indication of contamination is sounded as an evacuee passes through. In addition, a standard distance should be established that the potentially contaminated evacuee backs up to (typically 8 to 12 feet) and to wait 5 to 10 seconds to allow the portal monitor to acquire a new low background before proceeding a second time.

The procedure should also create a new position for the team to act as an access control officer at the point of the standard distance that individual evacuees start their movement to the portal monitor.

Schedule of Corrective Action: The monitoring and decontamination procedures used in Cecil County will be revised to include appropriate instructions on the set up and use of portal monitors. Additionally, these procedures will be revised to designate the access controller/ recorder position location. The use of these procedures will be demonstrated during the next scheduled Peach Bottom Atomic Power Station exercise.

Issue: 46-04-6.a.1-A-03

Condition: The location of the hand frisking operation, which was adjacent to the portal monitor, influenced the background of the portal monitor.

Possible Cause: The lack of a proper procedure documented in the Standard Operating Procedures for Cecil County and an understating of how the portal monitor operates.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: The presence of a contaminated evacuee influences the background of the portal monitor causing it to be less sensitive and potentially allowing a contaminated evacuee to pass through the portal without alarming.

Recommendation: The hand frisking monitoring point should be moved away from the portal monitor a sufficient distance down the path to the decontamination area.

Schedule of Corrective Action: The monitoring and decontamination procedures used in Cecil County will be revised to include appropriate instructions on the location of hand friskers. The use of these procedures will be demonstrated during the next scheduled Peach Bottom Atomic Power Station exercise.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.1.3 Emergency Worker Monitoring/Decontamination Center – Perryville High School

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

b. **DEFICIENCY:** None

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

Issue: 46-04-6.a.1-A-04

Condition: During whole body monitoring of an emergency worker, a controller told the monitor that his meter had "pegged." The monitor did not determine the level of the contamination or continue the remainder of the whole body monitoring. The emergency worker was immediately told that she was contaminated and directed to the decontamination facility.

Possible Cause: Less than adequate training.

Reference: NUREG-9654, J.10.h; K.5.b

Effect: The emergency worker had contamination on other areas of her body that would not have been documented.

Recommendation: Provide additional training.

Corrective Action Demonstrated: The individuals performing the monitoring received additional training in the proper use of the CDV-700 survey meter and proper documentation of contamination levels. They were also informed that even though contamination is found on one area of the body, the entire monitoring of the whole body must be completed before the individual is directed to the decontamination area.

After the additional training was completed, the 19-minute, whole-body frisk was satisfactorily re-demonstrated.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.1.4 Congregate Care Center – Perryville High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.1.5 Traffic and Access Control Point

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2 Harford County

5.2.1 Harford County Emergency Operations Center

a. **MET:**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2.2 Harford Media Center

a. **MET:**

1.a.1	5.b.1
1.b.1	
1.d.1	
1.e.1	

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2.3 Reception and Evacuee Monitoring/Decontamination Center – Fallston High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2.4 Emergency Worker Monitoring/Decontamination Center – Fallston High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2.5 Congregate Care Center – Fallston High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

5.2.6 Traffic and Access Control Point

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

6. **Maryland Schools**

6.1 **Cecil County Public School District**

6.1.1 **Conowingo Elementary School**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

6.2 **Harford County Public School District**

6.2.1 **North Hartford Elementary School**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

6.2.2 **North Hartford Middle School**

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

6.2.3 North Hartford High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** N/A

f. **PRIOR ARCAs – UNRESOLVED:** N/A

APPENDIX 1: ACRONYMS AND ABBREVIATIONS

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

A&N	Alert and Notification
ACP	Access Control Point
ALARA	As Low As Reasonably Achievable
ALT	Alternate Evaluator Team Leader
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Service
BRP	Bureau of Radiation Protection
CFR	Code of Federal Regulations
CO	Communications Officer
CRD	Control Rod Drive
DILs	Derived Intervention Levels
DRD	Direct Reading Dosimeter
EAL	Emergency Action Level
EAS	Emergency Alert System
ECCS	Emergency Core Cooling System
ECL	Emergency Classification Level
EHC	Electronic Hydraulic Control
EMC	Emergency Management Coordinator
EMS	Emergency Medical Services
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EMSO	Emergency Medical Services Officer
EPA	U.S. Environmental Protection Agency
EPLO	Emergency Preparedness Liaison Officer
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
ES	Elementary School
EW	Emergency Worker
FAA	U.S. Federal Aviation Administration
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FR	Federal Register
FRERP	Federal Radiological Emergency Response Plan
FSO	Fire Services Officer

GE	General Emergency
HP	Health Physics
HPCI	High Pressure Coolant Injection
HQ	Headquarters
HS	High School
ICF	ICF Consulting
IPZ	Ingestion Pathway Emergency Planning Zone
KI	Potassium Iodide
MCC	Motor Control Center
MDE	Maryland Department of the Environment
MEMA	Maryland Emergency Management Agency
Monit/decon	Monitoring/Decontamination
mR	Milliroentgen(s)
mR/h	Milliroentgen(s) Per Hour
MS	Middle School
MSL	Mean Sea Level
MW	Megawatt
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants, November 1980
ORO	Offsite Response Organization
OSC	Operational Support Center
PAD	Protective Action Decision
PAG	Protective Action Guidelines
PAR	Protective Action Recommendation
PBAPS	Peach Bottom Atomic Power Station
PEMA	Pennsylvania Emergency Management Agency
PIO	Public Information Officer
PSO	Police Services Officer
PSP	Pennsylvania State Police
PWO	Public Works Officer
R	Roentgen(s)
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
RCIC	Reactor Core Isolation Cooling
RCS	Reactor Coolant System
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
R/h	Roentgen(s) Per Hour

RHR	Residual Heat Removal
RO	Radiological Officer
RWCU	Re-circulating Water Cooling Unit
SAE	Site Area Emergency
SCR	Simulator Control Room
SGTS	Standby Gas Treatment System
SLC	Standby Liquid Control
TAF	Top of Active Fuel
TCP	Traffic Control Point
TL	Evaluator Team Leader
TLD	Thermoluminescent Dosimeter
TO	Transportation Officer
TRIP	Trip by Reactor Instrument Protection (system)
TSC	Technical Support Center
TWP	Township
USDA	U.S. Department of Agriculture

APPENDIX 2: EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Peach Bottom Atomic Power Station plume pathway REP exercise on May 19 and June 22, 2004. Evaluator Team Leaders are indicated by "TL" after their organization's name. Alternate Evaluator Team Leaders are indicated by "ATL" after their organization's name. The organization that each evaluator represents is indicated by the following abbreviations:

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

Evaluation Site	Name	Organization
COMMONWEALTH OF PENNSYLVANIA		
Pennsylvania EOC	Wierman, K.	FEMA
State Police Barracks - York Barracks Traffic Control Points	Kowieski, R.	*ICF
PENNSYLVANIA RISK JURISDICTIONS		
Chester County		
Chester Co. EOC	Henryson, A.	FEMA (TL)
	Freeman, B.	FEMA
	Johnson, N.	ICF
Reception Center—Octorara MS*	Henryson, A.	FEMA
Monit./Decon. and Mass Care—Octorara HS*	Henryson, A.	FEMA
Emergency Worker Monit./Decon.—Penns Grove MS*	Taylor, P.	ICF
West Nottingham Township EOC	Iannazzo, Q.	ICF
West Nottingham Township Route Alerting (hearing impaired)	Deaner, T.	ICF
Lancaster County		
Lancaster County EOC	Hough, A.	FEMA (TL)
	Berry, H.	ICF
	Samsel, R.	ICF
Reception Center—Willow Street Vo-Tech School*	Wojnas, E.	ICF
Monit./Decon. and Mass Care—Lampeter Strasburg School Complex (Field House)*	Harrison, H.	ICF

*Out-of-sequence (5/19/04)

Evaluation Site	Name	Organization
Emergency Worker Monit./Decon.—Lampeter Strasburg School Complex (Field House)*	Harrison, H.	ICF
East Drumore Township EOC	Moffet, D.	ICF
Fulton Township EOC	Spedding, H.	ICF
Martic Township EOC	Green, T.	ICF
Martic Township Route Alerting	Pomerantz, C.	FEMA
York County		
York County EOC	Kowieski, R.	ICF (TL)
Reception Center—Southern School Complex MS*	Kowieski, R.	ICF
Monit./Decon. and Mass Care—Southern School Complex HS*	Kowieski, R.	ICF
Emergency Worker Monit./Decon.—Stewartstown Fire Co.*	Mangi, S.	ICF
Delta Borough/Peach Bottom Township EOC	McCance, T.	ICF
Delta Borough/ Peach Bottom Township Route Alerting (Hearing Impaired)	Gawlak, W.	ICF
Lower Chanceford Township EOC	Rospenda, R.	ICF
PENNSYLVANIA SCHOOLS		
Chester County		
Oxford Area SD—Penns Grove HS*	Henryson, A.	FEMA
Lancaster County		
Penn Manor SD—Martic ES*	Wojnas, E.	ICF
Solanco SD—Swift MS*	Hough, A.	FEMA
York County		
Red Lion Area SD—Chanceford ES*	Helo, R.	FEMA
Southeastern SD—Delta/Peach Bottom ES*	Mangi, S.	ICF

*Out-of-sequence (5/19/04)

Evaluation Site	Name	Organization
STATE OF MARYLAND		
Maryland EOC	Helo, R.	FEMA (TL)
	Twiss, P.	FEMA
	Cray, D.	ICF
Accident Assessment Center (MDE)	Rodgers, R.	ICF
EOF (Cotsville, PA)	Bores, R.	NRC
Emergency News Center	Jackson, J.	ICF
State Field Monitoring Team A	Taylor, P.	ICF
State Field Monitoring Team B	Blunt, D.	ICF
MARYLAND RISK JURISDICTIONS		
Cecil County		
Cecil County EOC	Smith, R.	ICF (TL)
	Malone, L.	FEMA
	Gibbons J.	FEMA
Reception Center and Monit./Decon.—Perryville HS*	Berry, H.	ICF
Emergency Worker Monit./Decon.—Perryville HS	Taylor, P.	ICF
Congregate Care—Perryville HS*	Berry, H.	ICF
Traffic and Access Control Point	Visniesky, L.	ICF
Harford County		
Harford County EOC	Price, J.	FEMA (TL)
	Graham, R.	USDA
	Thompson, C.	FAA
Harford Media Center	Edmonson, B.	ICF
Reception Center and Monit./Decon.—Fallston HS*	Blunt, D.	ICF
Emergency Worker Monit./Decon.—Fallston HS*	Blunt, D.	ICF
Congregate Care—Fallston HS*	Blunt, D.	ICF
Traffic and Access Control Point	Nied, P.	ICF

*Out-of-sequence (5/19/04)

MARYLAND SCHOOL DISTRICTS

Cecil County Public SD		
Conowingo ES*	Malone, L.	FEMA
Harford County Public SD		
North Harford ES*	Nied, P.	ICF
North Harford MS*	Blosser, T.	FEMA
North Harford HS*	Price, J.	FEMA (ALT)

*Out-of-sequence (5/19/04)

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

This appendix lists the exercise evaluation area criteria that were scheduled for demonstration in the Peach Bottom Atomic Power Station (PBAPS) exercise on May 19 and June 22, 2004. The extent-of-play agreement for the commonwealth of Pennsylvania was approved by FEMA Region III on March 24, 2004. The extent-of-play agreement for the state of Maryland was approved by FEMA Region III on April 27, 2004.

The exercise evaluation area criteria, contained in the "FEMA Radiological Emergency Preparedness Exercise Evaluation Methodology," 67 FR 20580, April 25, 2002, represent a functional translation of the planning standards and evaluation criteria of NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for the Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980.

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

A. Exercise Evaluation Area Criteria

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

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.a – Mobilization

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

Sub-element 1.b – Facilities

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

Sub-element 1.c – Direction and Control

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

Sub-element 1.d – Communications Equipment

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

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

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

EVALUATION AREA 2: PROTECTIVE ACTION DECISION MAKING

Sub-element 2.a – Emergency Worker Exposure Control

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

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

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

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

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

Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9, J10.d, e)

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

Criterion 3.a.1: The OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers in accordance with the plan 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, 3.b)

Sub-element 3.b – Implementation of KI Decision

Criterion 3.b.1: KI and appropriate instructions are made 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)

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

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

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

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

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

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

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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

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

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.9)

EVALUATION AREA 5: EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

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

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

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

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

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

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

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

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

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

Sub-element 6.c – Temporary Care of Evacuees

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

B. Commonwealth of Pennsylvania Extent-of-Play Agreement

The extent-of-play agreement on the following pages was submitted by the Commonwealth of Pennsylvania, and was approved by FEMA Region III on March 24, 2004, in preparation for the PBAPS exercise on May 19 and June 22, 2004. The extent-of-play agreement includes any significant modification or change in the level of demonstration of each exercise evaluation area criterion listed in Subsection A of this appendix.

PEACH BOTTOM ATOMIC POWER STATION
2004 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

METHOD OF OPERATION

1. Peach Bottom Atomic Power Station (PBAPS)

The facility normally uses off-watch section personnel to participate in the exercise. The plant's simulated events, radiation readings, and emergency classifications will trigger offsite exercise actions.

2. Bureau of Radiation Protection (BRP)

Personnel will be present at the State EOC, the nuclear facility EOF and field locations. BRP personnel will not be evaluated during this exercise.

3. PEMA Operations at State EOC

PEMA Bureau of Operations and Training staff, augmented by designated PEMA personnel from other bureaus, plus Emergency Preparedness Liaison Officers (EPLOs) from designated state departments/agencies, will comprise operations at the State EOC during the after hours exercise. The State EOC Operations will not be evaluated.

4. PEMA Regional Office Operations

PEMA Regional Offices will not be activated and will staff a control cell only.

5. Counties Designated to Participate

Chester, York and Lancaster Counties, in coordination with PEMA, will demonstrate the capability to implement emergency response operations to include sheltering and/or evacuation. County government will provide direction and coordination to risk municipalities.

6. PEMA Liaison Officers

Liaison officers will be present at the participating risk county EOCs, Maryland State EOC and the PBAPS Emergency Operations Facility (EOF), and Emergency News Center (ENC) to provide assistance, guidance, and support. These liaison officers will participate as players in the exercise.

7. Controllers

Exelon Nuclear will provide controllers at the monitoring/decontaminating stations and centers.

8. PEMA Observers

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

9. FEMA Evaluators

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

10. Demonstration Windows

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

The out-of-sequence MS-1 hospital demonstration was evaluated at Ephrata Community Hospital on September 16, 2003.

The window for school demonstrations will be conducted out-of-sequence from **9:00 – 11:00 a.m. on May 19, 2004.**

The demonstration for reception centers, mass care centers, monitoring/ decontamination centers and stations will be conducted out-of-sequence from **7:00 – 9:30 p.m. on May 19, 2004.**

The out-of-sequence demonstration Pennsylvania State Police traffic control/access control points will be from **9:00 – 11:00 a.m. on May 19, 2004.**

County and municipal EOC operations will be conducted on the evening of **June 22, 2004.**

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

11. Stand-down

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

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

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

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

12. General Concepts

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

13. Re-demonstrations

During the out-of-sequence demonstrations on **May 19, 2004**, or the plume phase demonstrations on **June 22, 2004**, any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise provided it does not negatively interfere with the exercise. Refresher training can be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators with prior approval from the RAC Chair. It is permissible to extend the evaluation time to accommodate the re-demonstration. Activities corrected from a re-demonstration will be so noted.

PEACH BOTTOM ATOMIC POWER STATION
2002 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE

EXTENT OF PLAY AGREEMENT

EVALUATION AREA 1
Emergency Operations Management

Sub-element 1.a – Mobilization

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

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

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

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

PEMA Negotiated Extent of Play:
Pre-positioning of state emergency personnel at the Emergency Operations Facility (EOF) and Emergency News Center (ENC) is appropriate, due to the commuting distance from the individual's duty location or residence. Risk and support counties and risk municipalities will demonstrate call-outs. All out-of-sequence players and equipment will be pre-positioned.

Sub-element 1.b – Facilities

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

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

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

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

PEMA Negotiated Extent of Play:
One-third of ORO facilities will be evaluated during this exercise.

Sub-element 1.c – Direction and Control

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

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

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

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

PEMA Negotiated Extent of Play:
None

Sub-element 1.d – Communications Equipment

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

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

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

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

PEMA Negotiated Extent of Play:
None

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

INTENT
This sub-element is derived 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. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the unmodified CDV-700 series or if there are no manufacturer's recommendations for a specific instrument; 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 verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.

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

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

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

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

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

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

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

EVALUATION AREA 2
Protective Action Decision-Making

Sub-element 2.a – Emergency Worker Exposure Control

INTENT
This sub-element is derived 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 that 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:
None

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

INTENT
This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to independently project integrated dose from exposure rates or other information 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 (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, 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 release and meteorological data are provided by the licensee, 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:
This sub-element will not be evaluated during this exercise.

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

EXTENT OF PLAY

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

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

If the ORO has determined that KI will be used as a protective measure for the general public under off-site plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement shelter and evacuation protective actions. 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:

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

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

INTENT

This sub-element is derived 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 (e.g., 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, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations were an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

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

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

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

PEMA Negotiated Extent of Play:
None

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

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

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

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

EVALUATION AREA 3
Protective Action Implementation

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

INTENT

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

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

EXTENT OF PLAY

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

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

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

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be effected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to

low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry.

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

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

PEMA Negotiated Extent of Play:
Radiological briefings will be provided to address exposure limits and procedures to replace those approaching limits and how permission to exceed limits is obtained from the municipality and county. Emergency workers will also be briefed on when to take KI and on whose authority. Distribution of KI will be simulated. The completion of a KI report form will be demonstrated.

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

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

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

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

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

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

Sample kits will be pre-distributed to the municipalities for demonstration purposes. These sample kits will consist of 5-DRDs, charger, simulated PRDs and simulated KI, and instructions. Leakage testing verification and KI extension letters will be available to the evaluator upon request.

Sub-element 3.b – Implementation of KI Decision

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

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

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

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

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

PEMA Negotiated Extent of Play:
Pennsylvania Plans call for issuance of KI to the general public.

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

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

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

INTENT
This sub-element is derived 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 (e.g., provide protective action recommendations and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc.). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and procedures.

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

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

PEMA Negotiated Extent of Play:
Lists of people with special needs are maintained at the municipal EOCs and copies are available at the county. Copies of these lists will not be provided to the evaluators however; evaluators will be able to inspect these lists during the exercise.

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

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

EXTENT OF PLAY

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

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

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

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

PEMA Negotiated Extent of Play:

Evacuation of students will be conducted through an interview process.

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

Risk County school plans do not require communications between the school and vehicles.

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

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

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

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

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

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

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

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

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

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

EXTENT OF PLAY
OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, all contacts, actual or simulated, should be logged.

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

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

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

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

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

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

EVALUATION AREA 4
Field Measurement and Analysis

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

INTENT
This sub-element is derived 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. This does not imply that plume exposure projections should be made from the field data. 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 instruments 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 OROs 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 license 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 license teams do not obtain peak measurements in the plume, it is the ORO's decision as to whether peak measurements are necessary to sufficiently characterize the plume. The sharing and coordination of plume measurement information among all field teams (licensee, federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated.

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

All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless 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 to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. All methodology, including contamination control,

instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO plan and/or procedures.

OROs should use Federal resources as identified in the FRERP, and other resources (e.g., 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.

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

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

Sub-element 4.c – Laboratory Operations

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

EVALUATION AREA 5
Emergency Notification and Public Information

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

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

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

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

Offsite Response Organizations (OROs) should demonstrate the capability to sequentially provide an alert 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.

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

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

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

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

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

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

Criterion 5.a.2: [RESERVED]

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

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

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

Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting only needs to be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for

failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed-upon location.

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

PEMA Negotiated Extent of Play:
There are no exception areas in the PBAPS EPZ.

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

INTENT
This sub-element is derived 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 (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. The ORO should also be prepared to disclose and explain the Emergency Classification Level (ECL) of the incident. At a minimum, this

information must be included in media briefings and/or media releases. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

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

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

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

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

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

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

PEMA Negotiated Extent of Play:
None

EVALUATION AREA 6
Support Operation/Facilities

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

INTENT
This sub-element is derived 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. Prior to using monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

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

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

individual found to be contaminated, procedures should be discussed concerning the handling of potential contamination of vehicles and personal belongings.

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

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

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

PEMA Negotiated Extent of Play:
Expected demonstration should include a roster of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours.

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

The monitoring and decontamination areas do not have to be set-up – an interview will suffice.

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. The federal evaluators may view the actual maps at the map storage locations during the evening of the scheduled plume exercise.

One mass care center and one monitoring/decontamination center per risk county will be demonstrated during the out-of-sequence window. All monitoring and decontamination teams will demonstrate monitoring, decontamination and registration procedures at one mass care center per county. The risk counties will provide space at designated mass care centers for operation of monitoring/decontamination centers. Schematics of these monitoring /decontamination centers will be available to show organization within the facility and space management for monitoring and for decontamination of the evacuating

public. Procedures will be demonstrated to show minimizing contamination of the facility and separation of contaminated and non-contaminated (clean) individuals.

At the evacuee monitoring/decontamination centers each team, consisting of a minimum of two persons (monitor and recorder), will monitor a minimum of six (6) volunteer evacuees or one (1) volunteer evacuee six times , complete the Monitoring/Decontamination Report Form (either by demonstration or explanation), and instruct the evacuees to proceed to the mass care registration points for further processing. The teams will demonstrate: radiological monitoring of at least one vehicle and the simulated decontamination of at least two evacuees, one unable to be decontaminated based on controller inject data. Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Transporting of the contaminated person will be explained but not demonstrated. A CD V-700, or other survey meter, will be issued to each team. For Portal Monitor Use refer to paragraph below. PRDs will be simulated.

At the emergency worker monitoring/decontamination stations each team, consisting of a minimum of two persons (monitor and recorder), will monitor one emergency worker, complete the Monitoring/Decontamination Report Form (either by demonstration or explanation Discussions concerning processing of contaminated personnel will include capabilities and written procedures for showering females separate from males. Transporting of the contaminated person will be explained but not demonstrated. A CDV-700, or other survey meter, will be issued to each team. For Portal Monitor Use refer to next paragraph. PRDs will be simulated.

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

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

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

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

INTENT
This sub-element is derived 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 air intake systems, radiator grills, bumpers, wheel wells, tires, and door handles should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.

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

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

PEMA Negotiated Extent of Play:
Emergency worker station personnel will consist of a minimum of one monitor and one recorder and sufficient personnel to demonstrate monitoring of at least one vehicle. Schematics of these monitoring/decontamination stations will be available to show organization and space management within the facility. The evaluator will request that decontamination procedures be explained after the vehicle which has simulated contamination has been monitored. One CD V-700, or other survey meter, will be issued to each monitoring/decontamination team. One vehicle and/or piece of equipment will not be able to be decontaminated. Simulated radiation contamination data will be included in the scenario package, and injected by a controller. Set-up of the facility will be performed as closely as possible to that for an actual emergency with all route markings in place including

step-off pads; with the exception of long runs of plastic covered with paper which will not be demonstrated, but the materials will be available and explained.

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

Sub-element 6.c – Temporary Care of Evacuees

INTENT
This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross (ARC) 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.

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

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

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

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

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

This sub-element was evaluated on September 16, 2003 at Ephrata Community Hospital.

Peach Bottom Atomic Power Station
Extent of Play Demonstration Tables

COUNTY	DEMONSTRATION FOR EOC MOBILIZATION FOR COUNTIES	
	DATE	Time
Chester	June 22, 2004	Exercise Scenario
Lancaster	June 22, 2004	Exercise Scenario
York	June 22, 2004	Exemption Pending

RISK COUNTY	DEMONSTRATION FOR EOC MOBILIZATION FOR MUNICIPALITIES	
	MUNICIPALITY	DATE
Chester	West Nottingham Twp	June 22, 2004
Lancaster	Drumore Twp	June 22, 2004
	East Drumore Twp	June 22, 2004
	Fulton Twp	June 22, 2004
	FEMA Floater - Little Britain Twp	June 22, 2004
	Martic Twp	June 22, 2004
	Providence Twp	June 22, 2004
	Quarryville Borough	June 22, 2004
York	*Delta/Peach Bottom Twps	June 22, 2004
	*Fawn Grove Twp/Fawn Borough	June 22, 2004
	Lower Chanceford Twp	June 22, 2004

* Joint EOC

1. One reception center in each county.

COUNTY	DEMONSRATON OF RECEPTION CENTERS	
	DATE	TIME
Chester	May 19, 2004	7:00 p.m. – 9:30 p.m.
Lancaster	May 19, 2004	7:00 p.m. – 9:30 p.m.
York	May 19, 2004	7:00 p.m. – 9:30 p.m.

COUNTY	RECEPTION CENTERS LOCATIONS	QUANTITY
Chester	Octorara Middle School	1
Lancaster	Willow Street Career Technical Center	1
York	Southern School Complex	1

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

COUNTY	DEMONSTRATION OF MASS CARE CENTERS/HOST SCHOOLS	
	DATE	TIME
Chester	May 19, 2004	7:00 p.m.- 9:30 p.m.
Lancaster	May 19, 2004	7:00 p.m.- 9:30 p.m.
York	May 19, 2004	7:00 p.m.- 9:30 p.m.

COUNTY	Mass Care Center Locations	Quantity
Chester	Octorara High School	1
Lancaster	Lampeter-Strasburg High School	1
York	Southern School Complex	1

American Red Cross Chapters and POCs are as follows:

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

Chester County
Southeast Pennsylvania Chapter
23rd & Chestnut Streets
Philadelphia PA 19103
Maureen Tomoshuck (215) 299-4828

ARC of the Susquehanna Valley
P.O. Box 5740
Harrisburg, PA 17110
Matt Hullis (717) 257-1822

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

Chester	Penns Grove Middle School	May 19, 2004
Lancaster	Lampeter Strasburg School Complex (Field House)	May 19, 2004
York	Stewartstown Fire Company	May 19, 2004

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

Chester	West Nottingham Township	June 22, 2004
Lancaster	Martic Township	June 22, 2004
York	*Delta/Peach Bottom Twps	June 22, 2004

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

COUNTY	SCHOOL DISTRICT	SCHOOL
Chester	Oxford Area	Penns Grove MS
Lancaster	Penn Manor	Martic Elementary
	Solanco	Swift MS
York	Red Lion Area	Chanceford Elementary
	South Eastern	Delta/ Peach Bottom Elementary

6. Traffic and Access Control Points

   a. The Pennsylvania State Police from all three county troop locations will be briefed at the PSP York Barracks, located at 110 North Street, York, PA. Members attending the briefing will not actually deploy to the TCP/ACPs.
   b. The PSP briefing will be performed out of sequence in a demonstration window of 9:00 – 11:00 a.m. on May 19, 2004.

7. Each municipal/regional police force with a TCP assigned in its plan will demonstrate all preparation duties including TCP responsibilities and radiological briefing. Dispatch of persons to the TCP site will not occur during the exercise.

   a. Municipal and county staffs will be prepared to brief the FEMA evaluator on actions to be taken should there be an impediment to evacuation on a designated route. This will be demonstrated between 7:00pm - 9:30pm on June 22, 2004.

These municipal/regional police forces are (by county): N/A

Chester	Lancaster	York
N/A	Quarryville - N/A	N/A

2002 Peach Bottom Exercise
Listing of Prior Issues (Pennsylvania)

No.	OLD NUMBER	FACILITY EVALUATED	NEW CRITERIA
1		Chester Co. - West Nottingham Twp EOC	46-02-3.b.1-A-01
2		Chester Co. - West Nottingham Twp EOC	46-02-3.c.1-A-02
3	46-96-13-A-01	Pennsylvania State EOC	5.b.1
4	46-96-22-A-10	Chester Co. – EW Mon/Decon (Penn's Grove Middle School)	3.a.1
5	46-96-22-A-12	Chester Co. – EW Mon/Decon (Penn's Grove Middle School)	6.a.1
6	46-96-30-A-18	Lancaster Co. – East Drumore Township EOC	1.a.1
7	46-96-01-A-24	York Co. – Delta Twp/Peach Bottom Twp EOC	1.a.1
8		Lancaster Co. EOC	46-02-1.c.1-P-01
9		Lancaster Co. – Little Britain Township EOC	46-02-3.e.2-P-02
10		York Co. EOC	46-02-3.e.2-P-03
11	46-98-29-A-01	Pennsylvania State EOC – Ingestion Exercise	3.f.1
12	46-98-27-A-02	Chester Co. EOC – Ingestion Exercise	3.e.1
13	46-98-29-A-03	Lancaster Co. EOC – Ingestion Exercise	5.b.1
14	46-98-27-A-04	York Co. EOC – Ingestion Exercise	5.b.1

TABLE 1
FEDERAL EVALUATION PROCESS MATRIX

Evaluation Area	Consolidate	Frequency	Out-of-Sequence of Exercise Scenario	Credit	Staff Assistance Visit
1. Emergency Operations Management	1, 2, 3, 4, 5, 14, 17, 30				
Mobilization		Every Exercise	NO	YES	NO
Facilities		Once if new[1]	NO	YES	YES
Direction and Control		Every Exercise	NO	NO	NO
Communications Equipment		Once if new[1]	YES	YES	YES
Equipment and Supplies to Support Operations		Every Exercise	YES	YES	YES
2. Protective Action Decision-making	5, 7, 9, 14, 15, 16, 17, 26, 28				
Emergency Worker Exposure Control		Every Exercise	YES	YES	YES
Radiological Assessment & Protective Action Recommendations & Decisions for the Plume Phase of the Emergency		Every Exercise	NO	NO	NO
Protective Action Decisions for the Protection of Special Populations		Every Exercise	NO	NO	NO
Radiological Assessment & Decision-making for the Ingestion Exposure Pathway[2]		Once in 6 yrs.	NO	NO	NO
Radiological Assessment & Decision-making Concerning Relocation, Re-entry, and Return[2]		Once in 6 yrs.	NO	NO	NO
3. Protective Action Implementation	5, 14, 15, 16, 17, 27, 29				
Implementation of Emergency Worker Exposure Control		Every Exercise	YES	YES	NO
Implementation of KI Decision		Once in 6 yrs.	YES	NO	NO
Implementation of Protective Actions for Special Populations		Once in 6 yrs.[3]	YES	YES	YES
Implementation of Traffic and Access Control[4]		1 per Organization per exercise	YES	YES	YES
Implementation of Ingestion Pathway Decisions		Once in 6 yrs.	NO	NO	NO
Implementation of Relocation, Re-entry, and Return decisions		Once in 6 yrs.	NO	NO	NO

Evaluation Area	Consolidate	Frequency	Out-of-Sequence of Exercise Scenario	Credit	Staff Assistance Visit
4. Field Measurement and Analysis	6, 8, 24, 25				
Plume Phase Field Measurements & Analysis		Every Full Participation Exercise	YES	YES	NO
Post Plume Phase Field Measurements and Sampling		Once in 6 yrs.	YES	YES	NO
Laboratory Operations		Once in 6 yrs.	YES	YES	NO
5. Emergency Notification and Public Information	10, 11, 12, 13				
Activation of the Prompt Alert and Notification System	10	Every exercise	NO	NO	NO
Activation of the Prompt Alert and Notification System (Fast Breaking)	10	Separate Drill once in 6 yrs.	NO	NO	NO
Emergency Information & Instructions for the Public and the Media		Every exercise	NO	NO	NO
6. Support Operations/Facilities	18, 19, 20, 21, 22				
Monitoring & Decontamination of Evacuees and Emergency Workers[3] & Registration of Evacuees		Once in 6 yrs.	YES	NO	NO
Monitoring & Decontamination of Emergency Worker Equipment[3]		Once in 6 yrs.	YES	NO	NO
Temporary Care of Evacuees[6]		Once in 6 yrs.	YES	YES	YES
Transportation and Treatment of Contaminated Injured Individuals		Every 2 years	YES	YES	NO

[1] Will be evaluated if new or changed substantially.
[2] The plume phase and the post-plume phase (ingestion, relocation, re-entry and return) can be demonstrated separately.
[3] All facilities must be evaluated once during the six-year exercise cycle.
[4] Physical deployment of resources is not necessary.
[5] Facilities managed by the American Red Cross (ARC), under the ARC/FEMA MOU, will be evaluated once when designated or when substantial changes occur; all other facilities not managed by the ARC must be evaluated once in the six-year exercise cycle.
[6] Each State within the 10-mile EPZ of a commercial nuclear power site shall fully participate in an exercise jointly with the licensee and appropriate local governments at least every two years. Each State with multiple sites within its boundaries shall fully participate in a joint exercise at some site on a rotational basis at least every two years. When not fully participating in an exercise at a site, the State shall partially participate at that site to support the full participation of the local governments.

C. State of Maryland Extent-of-Play Agreement

The extent-of-play agreement on the following pages was submitted by the State of Maryland, and was approved by FEMA Region III on April 27, 2004, in preparation for the PBAPS exercise on May 19, and June 22, 2004. The extent-of-play agreement includes any significant modification or change in the level of demonstration of each exercise evaluation area criterion listed in Subsection A of this appendix.

PEACH BOTTOM ATOMIC POWER STATION
2004 RADIOLOGICAL EMERGENCY PREPAREDNESS EXERCISE
MARYLAND EXTENT-OF-PLAY

INTRODUCTION

The purpose of this document is to establish those exercise evaluation areas and corresponding extent-of-play parameters expected to be demonstrated during the Peach Bottom Atomic Power Station graded exercise to be conducted on June 22, 2004.

These evaluation areas have been developed through reviews of past exercises, associated plans and procedures, the proposed exercise scenario, applicable FEMA guidance documents, and extensive discussions with FEMA representatives.

All demonstrations will be conducted in accordance with established plans and procedures, except as noted for specific exercise evaluation areas described herein.

Out-of-sequence evaluations will be conducted on May 19, 2004 involving the two Peach Bottom risk jurisdictions in Maryland. The out-of-sequence activities to be demonstrated are:

- Special Facilities – Schools
- Reception Center Monitoring and Decontamination
- Emergency Worker, Equipment and Vehicles Monitoring and Decontamination
- Congregate Care
- Traffic and Access Control

The full-scale graded exercise will be conducted on June 22, 2004 involving all the Peach Bottom risk jurisdictions and selected State agencies in Maryland. Demonstration activities will be initiated following a simulated accident at the plant.

Actions will be taken in accordance with each jurisdiction's county emergency plan and procedures unless specified under the specific extent-of-play.

Peach Bottom Exercise 2004
Evaluation Schedule

Date **Time**	**Harford County**	**Cecil County**
May 19 0900 – 1000	Sub-element 3.c.2 – Schools North Harford Elementary North Harford Middle North Harford High (All demonstration at Schools)	Sub-element 3.c.2 – Schools Conowingo Elementary (All demonstration at School)
May 19 1300 – 1400	Sub-element 3.d – TCP/ACP Harford County EOC	
May 19 1900 – 2100	Sub-element 3.a.1, 6.a, 6.b – Reception Center Fallston High School Sub-element 6.c – Congregate Care Fallston High School Sub-element 3.a.1, 6.a, 6.b – Emergency Worker Monitoring Fallston High School	Sub-element 3.a.1, 6.a, 6.b – Reception Center Perryville High School Sub-element 6.c – Congregate Care Perryville High School Sub-element 3.a.1, 6.a, 6.b – Emergency Worker Monitoring Perryville High School
June 22 1600 – 2200	Maryland, Harford and Cecil County PEACHBEX Evaluations	Maryland, Harford and Cecil County PEACHBEX Evaluations
June 22 1600 – 2200		Sub-element 3.d – TCP/ACP Cecil County EOC

EVALUATION AREA 1
Emergency Operations Management

Sub-element 1.a – Mobilization

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

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.

STATE OF MARYLAND EXTENT OF PLAY
During the Out-of-Sequence activities on May 19, 2004, the emergency workers will prestage at various locations to reduce the amount of travel time. During June 22, 2004, the State of Maryland Department of the Environment, MEMA Public Information staff and other drill players that report to the Emergency Operations Center in Coatesville will pre-stage to reduce the amount of travel time involved in the exercise. MEMA will mobilize only key State agencies at the Maryland EOC. All other facilities will activate according to plans. Key State Agencies are: MEMA, Maryland Military Department/National Guard, Maryland Department of the Environment, Maryland Department of Health and Mental Hygiene, Maryland Department of Natural Resources, Maryland Department of Agriculture, Maryland Department of Transportation and Maryland State Police. Additionally, the County Agencies involved are Harford County Division of Emergency Management and Cecil County Emergency Management Agency.

Sub-element 1.b – Facilities

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs have facilities to support the emergency response.

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 in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans.

Sub-element 1.c – Direction and Control

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs have the capability to control their overall response to an emergency.

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 noted above or otherwise indicated in the extent-of-play agreement.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans.

OUTSTANDING ISSUES

Sub-element 1.d – Communications Equipment

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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.

EXTENT OF PLAY
OROs will demonstrate that a primary and at least one backup system are fully functional at the beginning of an exercise. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exists.

The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system.

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 noted above or otherwise indicated in the extent-of-play agreement.

STATE OF MARYLAND EXTENT OF PLAY
This element will be demonstrated during the June 22, 2004 exercise in accordance with plans. Failure of communications equipment will not be provided in the scenario but may be discussed with appropriate personnel.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs have emergency equipment and supplies adequate to support the emergency response.

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

All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and operationally checked before each use. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the unmodified CDV-700 series or if there are no manufacturer's recommendations for a specific instrument; 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 verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.

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

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

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

Quantities of dosimetry and KI available and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a Staff Assistance Visit. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, the ORO may produce a letter from FEMA indicating that the KI supply remains potent, in accordance with Food and Drug Administration (FDA) guidance. FEMA issues these letters based upon the findings of the certified independent laboratory that performed the analysis at the ORO's request and expense.

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

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

STATE OF MARYLAND EXTENT OF PLAY

In accordance with plans. KI has been pre-distributed to the general public. However, availability and dissemination of KI for the general population will be demonstrated for the evaluator during this exercise up to the point of actual distribution. TCP/ACP equipment will be described to the evaluator. Simulated PRDs will be used at some locations.

EVALUATION AREA 2
Protective Action Decision-Making

Sub-element 2.a – Emergency Worker Exposure Control

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that an 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 that 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.

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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information 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 protective action guides (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 (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

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 release and meteorological data are provided by the licensee, 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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with MDE plans and procedures.

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

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)

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to independently project integrated dose from exposure rates or other information 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 and base these choices on protective action guides (PAGs) from the ORO's plans and procedures, FRC Reports Numbers 5 and 7 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 (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

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

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

If the ORO has determined that KI will be used as a protective measure for the general public under off-site plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement shelter and evacuation protective actions. 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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans. Maryland counties have the authority to initiate or expand a PAD. If a recommendation is made for the general public to take KI, appropriate information will be provided to the public by the means of notification specified in the plan and/or procedures.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to determine protective action recommendations, including evacuation, sheltering and use of potassium iodide (KI), if applicable, for special population groups (e.g., 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.

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, Evacuation Time Estimates, availability of transportation assets, risk of evacuation vs. risk from the avoided dose, and precautionary school evacuations. In situations were an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs.

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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures.

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

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

Was this Criterion selected? YES_____ NO_X_ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs have the means to assess the radiological consequences for the ingestion exposure pathway, relate them to the appropriate protective action guides (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 surround 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.

EXTENT OF PLAY
It is expected that the ORO will take precautionary actions to protect food and water supplies, or to minimize exposure to potentially contaminated water and food, in accordance with their respective plans and procedures. Often such precautionary actions are initiated by the OROs based on criteria related to the facility's emergency classification levels (ECL). Such action may include recommendations to place milk animals on stored feed and to use protected water supplies.

The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the facility, and the extent of areas potentially impacted by the release. During this assessment, OROs should consider the use of agricultural and watershed data within the 50-mile EPZ. The radiological impacts on the food and water should then be compared to the appropriate ingestion PAGs contained in the ORO's plan and/or procedures. (The plan and/or procedures may contain PAGs based on specific dose commitment criteria or based on criteria as recommended by current Food and Drug Administration guidance.) Timely and appropriate recommendations should be provided to the ORO decision-makers group for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.

The ORO should demonstrate timely decisions to minimize radiological impacts from the ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and to the extent practical, coordinated with neighboring and local OROs.

OROs should use Federal resources, as identified in the Federal Radiological Emergency Response Plan (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.

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.

STATE OF MARYLAND EXTENT OF PLAY

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

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

Was this Criterion selected? YES_____ NO__X__ N/A_____

INTENT
The sub-element is derived from NUREG-0654, which provides that OROs have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are 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.

EXTENT OF PLAY
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 radionuclides 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 dosimeters 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 dosimeters 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 the 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 polices 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.

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.

STATE OF MARYLAND EXTENT OF PLAY

EVALUATION AREA 3
Protective Action Implementation

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

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

Was this Criterion selected? YES__X__ NO____ N/A____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; provide for direct-reading dosimeters to be read at appropriate frequencies by emergency workers; maintain a radiation dose record for each emergency worker; and provide for 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.

EXTENT OF PLAY
OROs should demonstrate the capability to provide appropriate direct-reading and permanent record dosimetry, dosimetry 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 OROs plans and procedures.

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

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

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

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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties. Additionally, this will be demonstrated on June 22, 2004 at the County EOCs up until the point of actual implementation of Emergency Worker exposure control.

Sub-element 3.b – Implementation of KI Decision

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

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

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

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 by an interview with 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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. KI has been pre-distributed to the general public. However, availability and dissemination of KI for the general population will be demonstrated for the evaluator during this exercise up to the point of actual distribution.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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.

EXTENT OF PLAY
Applicable OROs should demonstrate the capability to alert and notify (e.g., provide protective action recommendations and emergency information and instructions) special 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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. List of special populations will be available for inspection. Actual contact with special population groups will be described but will not be initiated.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

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

EXTENT OF PLAY
Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts, licensed day care centers, and participating private schools within the emergency planning zone of emergency conditions that are expected to or may necessitate protective actions for students.

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

Implementation of protective actions should be completed subject to the following provisions: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to 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 participating school(s) or school system(s) should demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools.

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties. In Harford and Cecil Counties, the interview of the School Principal will be done at each school. The School Services Officer is staged at the County EOC and will be coordinating activities with the Principal, including notifications.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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.

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 agreement.

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

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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.

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties.

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

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

Was this Criterion selected? YES_____ NO_X_ N/A_____

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 emergency planning 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.

EXTENT OF PLAY
Applicable OROs 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.

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

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

STATE OF MARYLAND EXTENT OF PLAY

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

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)

Was this Criterion selected? YES_____ NO__X__ N/A_____

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 emergency planning 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.

EXTENT OF PLAY
Development of measures and strategies for implementation of ingestion pathway zone (IPZ) protective actions should be demonstrated by formulation of protective action information for the general public and food producers and processors. This includes the capability for the rapid reproduction and distribution of appropriate reproduction-ready information and instructions to pre-determined individuals and businesses. OROs 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. However, 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.

STATE OF MARYLAND EXTENT OF PLAY

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

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

Was this Criterion selected? YES_____ NO__X__ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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.

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.

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 dosimeters 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 dosimeters, and maintenance of emergency worker radiation exposure records.

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

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

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

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

STATE OF MARYLAND EXTENT OF PLAY

EVALUATION AREA 4
Field Measurement and Analysis

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT

This sub-element is derived 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. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Field teams should be equipped with all instruments 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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with the MDE procedures. Harford and Cecil counties do not dispatch field teams.

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

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)

Was this Criterion selected? YES__X__ NO____ N/A____

INTENT
This sub-element is derived 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. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY
Responsible OROs 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 license 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 license teams do not obtain peak measurements in the plume, it is the ORO's decision as to whether peak measurements are necessary to sufficiently characterize the plume. The sharing and coordination of plume measurement information among all field teams (licensee, federal, and ORO) is essential.

Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated.

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

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with the MDE procedures. Plume peak monitoring is the responsibility of the utility field teams. MDE teams monitor plume edge. MDE will only perform air and ambient measurements at appropriate locations determined by the Field Team Leader in response to the scenario. No Federal participation will be demonstrated during the exercise.

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

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)

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived 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. This does not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

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

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

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with the MDE procedures. MDE will only perform air and ambient measurements at appropriate locations determined by the Field Team Leader in response to the scenario. Laboratory analysis will not be demonstrated.

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

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

Was this Criterion selected? YES_____ NO_X_ N/A_____

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 ingestion emergency planning zone (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.

EXTENT OF PLAY
The ORO field teams 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, 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 must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent-of-play agreement.

STATE OF MARYLAND EXTENT OF PLAY

Sub-element 4.c – Laboratory Operations

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

Was this Criterion selected? YES_____ NO__X__ N/A_____

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

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 instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze

atypical radionuclide releases (e.g., transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

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

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

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

STATE OF MARYLAND EXTENT OF PLAY

EVALUATION AREA 5
Emergency Notification & Public Information

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived 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."

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with State and County plans and procedures. Procedures for activation of the siren system will be described and simulated to the point of activation. Siren sounding will not occur.

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

Criterion 5.a.2: RESERVED

Was this Criterion selected? YES____ NO____ N/A__X__

INTENT

STATE OF MARYLAND EXTENT OF PLAY
None

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

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)

Was this Criterion selected? YES__X__ NO____ N/A____

INTENT
This sub-element is derived 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."

EXTENT OF PLAY
OROs with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5-10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the

decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information.

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

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

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with State and County plans and procedures. There are no exception areas within the 10-mile EPZ. There are no siren failures included in the scenario. Back-up route alerting will be described to the evaluator but will not be demonstrated.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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 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 be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

EXTENT OF PLAY

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

The OROs should ensure that emergency information and instructions are consistent with protective action decisions made by appropriate officials. The emergency information should contain all necessary and applicable instructions (e.g., evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out protective action decisions provided to them. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas.

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

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

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

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

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

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with State and County plans and procedures. There are no non-English speaking populations within the 10-mile EPZ.

EVALUATION AREA 6
Support Operation/Facilities

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs 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.

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. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the 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 12-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

Decontamination of evacuees/emergency workers may be simulated and conducted by interview. The availability of provisions for separately showering should be demonstrated or explained. The staff should demonstrate provisions for limiting the spread of contamination. Provisions could include floor coverings, signs and appropriate means (e.g., partitions, roped-off areas) to separate clean from potentially contaminated areas. Provisions should also exist to separate contaminated and uncontaminated individuals, provide changes of clothing for individuals whose clothing is contaminated, and store contaminated clothing 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 noted above or otherwise indicated in the extent-of-play agreement.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. Complete set up of monitoring facilities will not be demonstrated. The monitoring facilities will be required to set up only the original monitoring station and the final decontamination station. The participants may discuss how the area would be fully marked off with rope and barriers from the original monitoring point to the final decontamination point, but actual set up is not required. Flow charts and diagrams will be available. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties.

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

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

EXTENT OF PLAY
The monitoring staff should demonstrate the capability to monitor equipment, including vehicles, for contamination in accordance with the ORO's plans and procedures. Specific attention should be given to equipment, including vehicles, that 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 air intake systems, 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.

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties.

Sub-element 6.c – Temporary Care of Evacuees

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

Was this Criterion selected? YES__X__ NO_____ N/A_____

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross under existing letters of agreement.

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 criteria, exercise demonstration expectations should be clearly specified in extent-of-play agreements.

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

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

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

STATE OF MARYLAND EXTENT OF PLAY
In accordance with plans and procedures. Actual set-up of facilities will not be demonstrated. Operation of the center will be explained to the evaluator. This element will also be evaluated during the out-of-sequence evaluations on May 19, 2004 in Harford and Cecil Counties.

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

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

Was this Criterion selected? YES_____ NO_____ N/A__X__

INTENT
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

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

OROs 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, any vehicle (e.g., car, truck, or ambulance) may be utilized to transport a simulated 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 would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

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

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

The medical facility should demonstrate the capability to 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.

STATE OF MARYLAND EXTENT OF PLAY

Location of Key Exercise Facilities:

State EOC
Camp Frettered Military Reservation
5401 Rue Saint Lo Drive
Reisterstown, Maryland 21136

Harford County Division of Emergency Operations
2220 Ady Road
Forest Hill, Maryland 21050

Cecil County Department of Emergency Services
129 East Main Street, Suite 6
Elkton, Maryland 21921

Department of Environment Emergency Response Division
1800 Washington Boulevard, Suite 105
Baltimore, Maryland 21230

PBAPS Emergency Operations Facility and Joint Public Information Center
175 North Caln Road
Coatesville, Pennsylvania 19320

APPENDIX 4: EXERCISE SCENARIO

EXELON NUCLEAR PEACH BOTTOM ATOMIC POWER STATION
2004 BIENNIAL EXERCISE
NARRATIVE SUMMARY

INITIAL CONDITIONS

WEATHER FORECAST:
Partly cloudy and warm today with light winds from the east northeast. Highs today will be in the mid 70's. The skies will become clear tonight with lows in the mid 50s. Fair and cooler conditions tomorrow with winds shifting from the north at 5 to 10 mph. The high tomorrow will be 60 to 63 degrees. Probability of precipitation is 10% tonight.

Unit 2
Unit is at 80% power for 1 day. The unit had been at 100% for the previous 100 days. The unit is operating on 101% Flow Control. The quarterly surveillance of the HPCI system is due to be performed this shift. Out of service equipment includes the A Condensate Pump with the motor removed for refurbishment. Return to service is expected in 48 hours. The A Standby Liquid Control Pump is out of service with the motor removed for replacement. Return to service is expected in 24 hours.

A HPCI system quarterly surveillance is scheduled to be conducted by the control room staff during this shift.

Unit 3
Unit is in day 7 of a 20 day outage. The core is currently off-loaded. Work is being performed on the RWCU small bore piping and supports. The HP turbine and generator stator are disassembled. Work is in progress on the HPCI sparger and in the Torus.

NORMAL OPERATIONS
1530 to 1545

The operating crew will be briefed at 1500 and is expected to take the shift by 1530. They will be expected to maintain 80% power and start actions to perform the HPCI system quarterly surveillance test.

UNUSUAL EVENT
1545 to 1630

First Earthquake

At 1545, an earthquake will be felt onsite and the earthquake alarm is received.

Expected Actions
Operators will initiate procedures SE-5, "Earthquake" and SO 67.7.A, "Verification of Suspected Earthquake or Seismic System Activation," in response to the felt earthquake and alarm. Review of the seismic monitoring instrumentation per procedure SO 67.7.A will provide a reading of 0.02 g's. The Shift Manager should declare an Unusual Event per EAL HU3 (Earthquake > 0.01 g as determined by SO 67.7.A). All the proper notifications should be made.

A EHC Pump Trip / A CRD Pump Trip
At 1545, the A EHC pump and the A CRD pump will trip due to relay logic malfunctions in response to the earthquake motion.

Expected Actions
In response to the trip of the A EHC pump, operators should start the redundant B EHC pump and restore EHC system pressure to avoid a main turbine trip. In response to the trip of the A CRD pump, operators should start the redundant B CRD pump and restore CRD system pressure to avoid a required reactor shutdown. Direction should be given to inspect the A EHC and A CRD pumps and other plant equipment for signs of damage.

ALERT
1630 to 1830

Second Earthquake
At 1630, a second earthquake is felt onsite and the earthquake alarm is received. Review of the seismic monitoring instrumentation per procedure SO 67.7.A will provide a reading of 0.06 g's.

Expected Actions
Operators will initiate procedures SE-5, and SO 67.7.A, in response to the felt earthquake and alarm. The Emergency Director/Shift Manager should declare an **Alert** per EAL HA3 (Earthquake > 0.05 g as determined by SO 67.7.A). The Emergency Response Organization (ERO) should be activated (code 7744) and all the proper notifications should be made. Command and Control should be transferred to the TSC as soon as possible. Since the earthquake level exceeded the Operating Basis Earthquake, a plant shutdown per procedure GP-3, "Normal Plant Shutdown," should be initiated. Controller direction will be given to schedule the reactor scram for after 2100 hours.

Recirc Pump Runback
At 1630, the 2B Reactor Recirculation pump runs back to minimum speed due to relay malfunctions in response to the earthquake motion.

Expected Actions
In response to the run back of the 2B Reactor Recirculation pump, operators should verify that the power – to-flow conditions are not in an unsafe region due to thermal-hydraulic instability. Control Rods may be inserted to reduce power and increase operating margin.

Follow-up Expected Actions
Initial operator inspections of the A CRD pump, the A EHC pump, the 2B Reactor Recirculation pump and associated breakers and relay logic should be followed-up by troubleshooting and inspections by the TSC and OSC. Inspections do not identify any apparent cause of the EHC and CRD pump trips however, the relay logics can not be reset and the pumps can not be restarted. Inspection of the 2B Reactor Recirculation Pump and the associated breakers and relay logic do not identify any apparent cause of the runback, however, the relay logic can not be reset and the pump speed can not be increased.

SITE AREA EMERGENCY
1830 to 2000

Third Earthquake / Reactor Shutdown
At 1830, a third earthquake is felt onsite and causes a trip of the #2 13KV electrical bus that supplies power to the only two operating condensate pumps. A rapid decrease in reactor water level occurs with the loss of the Condensate and feedwater pumps. A successful automatic (or manual) reactor scram occurs on low reactor water level and all rods insert. Reactor pressure is maintained between 800 and 1000 psi using Main Turbine Bypass valves and Safety Relief Valves (SRVs) that causes reactor level to slowly decrease over this time period.

Expected Actions
Operators should ensure a reactor shutdown and insertion of all control rods. Attempts should be made to restore reactor level with high pressure make-up systems such as HPCI, RCIC, CRD and SLC. The B CRD pump flow should be maximized and inspections initiated of the A CRD, HPCI, RCIC, SLC systems to attempt to re-establish a high pressure injection system. Reactor pressure should be maintained between 800 and 1000 psi using main turbine bypass valves and SRVs.

#2 13 KV Bus Trip
At 1830, the #2 13KV electrical bus trips resulting in loss of feedwater make-up to the reactor. The trip is due that resulted from a cubicle divider that broke away and causes to a hard ground on the bus.

Expected Actions
Operators should investigate the bus trip and attempt to cross-connect 480 V loads through the cross connecting breakers. TSC and OSC personnel should investigate the bus malfunction and the inspections will reveal that the B Condensate pump cubicle has a cubicle divider that broke away and causes to a hard ground on the bus. The bus bar has been destroyed and requires replacement. Repairs are estimated to take 8 hours.

RCIC Malfunction
When level decreases to the lo-lo setpoint, the RCIC system automatically starts. The RCIC system will initiate but trip on a malfunction of the RCIC trip-throttle latch mechanism.

Expected Actions
Operators should attempt to reset the trip throttle valve and valve inspection will reveal the broken latch mechanism. TSC and OSC personnel should investigate the system malfunction and attempt to repair the broken trip throttle valve. Successful repairs will be delayed by Controller intervention until 2000 hours, after the reactor is depressurized.

HPCI Steam Leak and Isolation Failure
When level decreases to the lo-lo set point, the HPCI system will initiate but a steam leak on the steam supply line will initiate a system isolation and trip. The HPCI system will trip but the steam supply isolation valves, MO-15 and MO-16, will fail to isolate. An Equipment Operator will report visible steam in the HPCI room between the outboard Isolation valve, MO-16 and the steam inlet valve, MO-14. HPCI room temperatures increase to above the T-103 action levels (>150 Degrees F).

Expected Actions
Operators should attempt to manually isolate the HPCI system and manually close the isolation valves. All attempts from the Control Room will be unsuccessful. The HPCI room will be uninhabitable due to the high temperatures and personnel should not attempt to enter the room to repair the steam leak. TSC and OSC personnel should investigate the isolation failure and the steam leak. All attempts to repair the logic or close the valves at the breakers will be unsuccessful. The Station Emergency Director should declare a **Site Area Emergency** per EAL FS1 (POTENTAIL LOSS of the RCS barrier (2.d.4) and LOSS of the Primary Containment Barrier (3.d.1)). All proper notifications should be made. Site Accountability and Evacuation should be initiated. Controller direction will be given to simulate the site evacuation and announcement. If assembly is directed, the selected location should be the North Sub Station.

B SLC Pump Trip
In accordance with TRIP procedures, operators should start the B Standby Liquid Control (SLC) pump. This pump trips upon manual initiation due to a pump/motor coupling failure that causes the anchor bolts to fail. The B CRD pump is the only operating high pressure injection pump available for operation.

Expected Actions
TSC and OSC personnel should investigate the pump failure. Inspection will reveal the failure of the coupling and anchor bolts that require over 24 hours to repair.

MCC E124-R-C Fault
At 1830, the Motor Control Center (MCC) E124-R-C experiences a fault and the feeder breaker trips. The fault is annunciated in the Control Room. This MCC provides power to the A Core Spray system injection valves.

Expected Actions
TSC and OSC personnel should investigate the MCC fault and investigation reveals the feeder breaker does not reset and must be replaced. Successful repairs will be delayed by Controller intervention until 2010 hours, after level has reached –200".

GENERAL EMERGENCY
2000 to 2130

Emergency Depressurization/ ECCS Injection Valve Failures
Reactor level continues to decrease and eventually reaches Top of Active Fuel (TAF) warranting an Emergency Depressurization and declaration of a General Emergency.

Expected Actions
Operations personnel should align low pressure injections systems in anticipation of reaching Top of Active Fuel (TAF) and performing the Emergency Depressurization. Low pressure systems available include the A and B RHR systems and the B Core Spray system. The A Core Spray system is not available due to the loss of MCC E124-R-C that feeds the A loop injection valve. The Reactor Building ventilation should isolate and the SGTS system should initiate on low water level changing the release pathway from the Vent Stack to the Main Stack. Level is not restored until MCC E124-R-C feeder breaker repairs are completed and the A Core Spray injection valve opens.

At approximately 2000 hours, reactor level should reach –172" TAF and operators should align all available low pressure systems and open five SRVs and conduct an Emergency Depressurization. Reactor Level will initially increase and then decrease below –172" and will continue to decrease to below –195". The Station Emergency Director should declare a **General Emergency** per EAL FG1 (LOSS of the Fuel Clad Barrier (1.a.1), Loss of the RCS Barrier (2.a.1) and Loss of the Primary Containment Barrier (3.d.1). The EOF should prepare a PAR based on LOSS of all three Fission Product Barriers. The affected sectors to be evacuated should be SSW, SW and WSW. All proper notifications should be made including delivery of the PAR. The injection valves fail to open in the A and B RHR and B Core Spray Systems. Reactor water level does not immediately recover and Primary Containment radiation levels increase as fuel damage occurs due to the reduced water level.

Abnormal Radiological Release
When reactor water level goes below TAF, fuel damage increases reactor coolant activity. The reactor coolant activity in the HPCI steam leak causes an increase in the area radiation readings. The SGTS ventilation system exhausts the HPCI room atmosphere and discharges to the environment through the Main Stack. Main Stack Radiation Monitor indicates an increase in the effluent levels to above 2 times the pre-event levels.

Expected Actions
SCR and TSC personnel should recognize the start of the abnormal radiological release and include this condition in the Notification of the General Emergency. Reactor depressurization in response to the level drop below TAF will decrease the release into the HPIC room. Offsite Field Monitoring Teams should start to measure increases in radiation levels from the release.

TSC and OSC personnel should investigate the failure of the ECCS injection valves to open. Controller direction will be given that repairs to the MCC E124-R-C feeder breaker are accomplished by 2010 and power is restored to the A Core Spay Injection Valve. Reactor water level is restored using the A Core Spray system.

Wind Shift and PAR Revision
At approximately 2045 hours, the wind direction moves and changes the affected sectors involved in the PAR.

Expected Actions
The EOF Protective Measure should recognize the wind shift and recommend a change to the PAR to increase the number of sectors from 3 to 4. The new sectors to be evacuated should be S, SSW, SW and WSW. The PAR form should be revised and all appropriate notifications should be made.

EXERCISE TERMINATION
2115

The exercise will be terminated when agreement is reached between the Lead Scenario Controller, the Lead EOF Controller and the Lead PEMA and MEMA Controllers that all applicable objectives have been demonstrated.

APPENDIX 5: PLANNING ISSUES

This appendix contains the Planning Issues assessed during the May 19 and June 22, 2004, exercise at the Peach Bottom Atomic Station. Planning Issues are issues identified in an exercise or drill that do not involve participant performance, but rather involve inadequacies in the plan or procedures. Planning Issues are required to be corrected through the revision and update of the appropriate State and local RERPs and/or procedures in accordance with the following schedule:

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

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

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

2.3.2 York County Reception and Monitoring/Decontamination Center—Southern School Complex MS

Issue: 46-04-6.a.1-P-01

Condition: There was confusion among the reception center emergency workers, as to when, and where evacuees' vehicles are to be decontaminated.

Possible Cause: There were no traffic pattern diagrams, or description as to when and where vehicles will be decontaminated.

Reference: NUREG-0654, J.12

Effect: Confusion among staff members regarding the procedures for handling possibly contaminated vehicles. Precious time was wasted, while exploring various avenues for handling possibly contaminated vehicles.

Recommendation: Prepare drawings for vehicle traffic patters, and train staff responsible for vehicle monitoring and decontamination. Designate certain area, as "contaminated vehicles parking" area. Establish procedures on when and where vehicles will be decontaminated. Pay special attention to proximity to water supply outlets and storm drains.

State Response: Plans and procedures will be revised and training will be conducted. This "Planning Issue" will be demonstrated during the next scheduled Peach Bottom Atomic Power Station exercise.

3.2.1 Pennsylvania Schools, Penn Manor School District—Martic Elementary School

Issue: 46-04-3.c.2-P-02

Condition: The Amish school student's transportation needs are not taken into consideration when a decision is made to evaluate schools. The Penn Manor School District transport Amish School students to and from school on a daily basis.

Possible Cause: Penn Manor School District Radiological Emergency Response Plan does not address coordination of transportation needs for the Amish school students.

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

Effect: The Amish School could be overlooked in the event of an evacuation for students.

Recommendation: Include procedures in the Plan to coordinate the need to transport the Amish school students.

State Response: Plans and procedures, as appropriate, will be revised and training will be conducted. This "Planning Issue" will be demonstrated during the next scheduled Peach Bottom Atomic Power Station exercise.

5.1.2 Cecil County Reception and Monitoring/Decontamination Center—Perryville High School

Issue: 46-04-6.a.1-P-03

Condition: Cecil County Standard Operating Procedures specify the hand frisking of a contaminated evacuee with the DC V-700 should be completed in approximately 4 minutes.

Possible Cause: A lack of understanding of the operational characteristics of the CD V-700.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: A thorough characterization of the contaminated evacuee would not be performed; hence, additional areas of contamination may not be detected or identified.

Recommendation: The hand frisking procedure should be re-evaluated with the FEMA portable instrument guidance for detecting contamination, dated October 3, 2002, and the established standard time necessary to scan an individual with a CD V-700 survey instrument revised to approximately 19 minutes for an adult.

5.1.2 Cecil County Reception and Monitoring/Decontamination Center—Perryville High School

Issue: 46-04-6.a.1-P-04

Condition: The holding area for the contaminated evacuees awaiting transport to an appropriate medical facility was not defined.

Possible Cause: The plan/procedures do not define a holding area.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: Potential for cross contamination in the evacuee reception area.

Recommendation: It is recommended that the holding area be roped off and marked as a contamination or "dirty" area separated from the general population awaiting initial monitoring.

It is also recommended that all signs and directional posters be reevaluated and expanded throughout the Center.

5.1.2 Cecil County Reception and Monitoring/Decontamination Center—Perryville High School

Issue: 46-04-6.a.1-P-05

Condition: The monitoring and/or decontamination of pets held at the center were not addressed.

Possible Cause: The procedures do not address the monitoring and/or decontamination of pets held at the center.

Reference: NUREG-0654, J.10.h; J.12; K.5.a

Effect: Potential for cross contamination of the screened evacuees would possibly exist when they are released to return to their homes or leave the shelter to stay elsewhere.

Recommendation: It is recommended that a procedure be developed to address the monitoring and decontamination of pets received at the Reception Center.

5.2.2 Harford County Reception and Evacuee Monitoring/Decontamination Center—Fallston High School

Issue: 46-04-6.a.1-P-06

Condition: Fallston High School Monitoring and Decontamination Standard Operating Procedures do not provide guidance for use of the Bicron Model 903 Portal Monitor. Use of the portal monitor is indicated in the Attachment flow diagrams, but a formal procedure for setting-up, use, and testing of the portal monitor is not available as part of the operating procedures.

Possible Cause: No procedures are available for portal monitors.

Reference: NUREG-0654, K.5.a, b

Effect: Reference on proper set-up and usage of the portal monitor is needed to avoid potential confusion and possible misuse.

Recommendation: Revise standard operating procedures to include a section on use and set-up of the portal monitor.

6.2.1 Maryland Schools, Harford County Public School District—North Harford Elementary School

Issue: 46-04-3.c.2-P-07

Condition: The North Harford Elementary School was unable to monitor the Emergency Alert System (EAS) station WAMD 970AM.

Possible Cause: The North Harford Elementary School is too far from the station transmitter, and/or the transmitted radio signal is too weak.

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

Effect: The North Harford Elementary School is unable to monitor EAS messages, which provide a secondary means of protective action information.

Recommendation: Change the "Checklist for a Radiological Emergency at the Peach Bottom Atomic Power Station" to indicate WXCY 103FM as the monitored EAS station. WXCY 103FM can be received at the North Harford Elementary School and per agreement monitors WAMD 970AM and repeats all EAS messages.

APPENDIX 6: ADDITIONAL PRIOR ISSUES

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

1.1 Pennsylvania State Emergency Operations Center

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

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

Reason ARCA Unresolved: The June 22, 2004, exercise was not an ingestion exercise.

2.1.1 Chester County Emergency Operations Center

Issue No.: 46-98-27-A-02 (3.e.1)

Description: Chester County officials did not simulate contacting the Chester Water Authority to close off, or coordinate the closing of, county's water intake (#123004), which is in the Susquehanna River in Lancaster County near the PBAPS. This surface water intake was located in Zone A (i.e., the Restricted Zone defined by the Commonwealth of Pennsylvania). (NUREG-0654, J.9, 11)

Reason ARCA Unresolved: The June 22, 2004, exercise was not an ingestion exercise.

2.2.1 Lancaster County Emergency Operations Center

Issue No.: 46-98-29-A-03 (5.b.1)

Description: The press release did not describe the procedures according to the Lancaster County plans, Appendix 16, Annex E.VI.C, 19, a.5., for the return of evacuees. Also, it failed to identify known landmarks and geographical boundaries or to identify protective action measures for milk and other food products. (NUREG-0654, M.1, 3; N.1.a)

Reason ARCA Unresolved: The June 22, 2004, exercise was not an ingestion exercise.

2.3.1 York County Emergency Operations Center

Issue No.: 46-02-3.e.2-P-03

Description: York County Radiological Emergency Response Plan Annex E, Appendix 15, Ingestion Exposure Pathway Emergency Planning Zone, is not current. The Annex references the U.S. Food and Drug Administration (FDA) 1982 protective action guidelines (PAGs) and other dated information. According to FEMA HQ guidance, plans were to be updated by April 2000 with the new FDA guidance, dated August 13, 1998, and entitled, "Accidental Radioactive Contamination of Human Food and Animal Feeds: Recommendations for State and Local Agencies," including the changes to Derived Intervention Levels (DILs). (NUREG-0654, p. 4)

Reason ARCA Unresolved: The York County EOC was not scheduled for demonstration during the June 22, 2004, exercise.

Issue No.: 46-98-27-A-04 (5.b.1)

Description: The lead-in scenario for the Ingestion Pathway Exercise, Day 2, indicated that milk and agricultural products within the "footprint" in Area E were unsuitable for consumption. However, the media map advisory, which was prepared and released by York County, stated that "Print D represents the area in which agricultural products, including milk and crops, are unsuitable for consumption or market sale." Because Area D is smaller than Area E, the media and public would assume that the foods in a large area between the limits of Areas D and E were safe, whereas they actually were unsafe. (NUREG-0654, E.5, 7; J.9, 11)

Reason ARCA Unresolved: The June 22, 2004, exercise was not an ingestion exercise.

Little Britain Township EOC

Issue No.: 46-02-1.c.1-P-02

Description: The page numbers of the Little Britain Township Radiological Emergency Plan (RERP) table of contents, the body of the RERP, and the RERP references/appendices do not correspond. In addition, the Emergency Operations Center (EOC) references a form in both the RERP and Implementing Procedures that is no longer in use. (Little Britain Township Radiological Emergency Response Plan for Incidents at the Peach Bottom Atomic Power Station – Revision: October 2002, RERP – Pg. 24 (4), Attachment J, and Radiological Officer Implementing Procedures - Pgs. G-1, G-3, G-4, G-6, G-7)

Corrective Action Demonstrated: The Little Britain Township RERP and Implementing Procedures have been updated with the accurate information.