



Final Exercise Report

Surry Power Station

Licensee: *Dominion Generation*

Exercise Date: *August 3, 1999*

Report Date: *October 8, 1999*

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

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I. EXECUTIVE SUMMARY

On August 3, 1999, the Federal Emergency Management Agency (FEMA), Region III, conducted a biennial exercise in the plume exposure pathway emergency planning zone (EPZ) around the Surry Power Station (SPS). 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 prior exercise at this site was conducted on August 25-26, 1997. The qualifying emergency preparedness exercise was conducted on October 30, 1981.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Virginia, the counties of Surry, Isle of Wight, York, James City, Charles City, and New Kent, and the cities of Newport News, Williamsburg, Poquoson, and Hampton, who participated in this exercise.

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

This report contains the final evaluation of the biennial exercise. The capabilities of risk and support jurisdictions to coordinate and provide reception, mass care, and radiological monitoring and decontamination for both evacuees and emergency workers were evaluated.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and adequately implemented them. One Deficiency and 53 Areas Requiring Corrective Action (ARCA) were identified as a result of this exercise. There were 36 prior issues evaluated during this exercise related to SPS and 17 related to North Anna; 31 were resolved for Surry and 11 for North Anna. Ten planning issues were also identified during the exercise.

II. INTRODUCTION

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

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of radiological RERPs and procedures developed by State and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by State and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (Federal Register, Vol. 58, No. 176, dated September 14, 1993); and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
 - U.S. Department of Agriculture,
 - U.S. Department of Commerce,
 - U.S. Department of Energy,
 - U.S. Department of Health and Human Services,
 - U.S. Department of the Interior,
 - U.S. Department of Transportation,
 - U.S. Environmental Protection Agency,
 - U.S. Food and Drug Administration, and
 - U.S. Nuclear Regulatory Commission.

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

The Commonwealth of Virginia and local jurisdictions formally submitted the RERPs for SPS to FEMA Region III for 44 CFR 350 approval. This submission was followed closely by a critique and evaluation of these plans; the plans were approved on February 23, 1983.

On August 3, 1999, FEMA Region III conducted a joint REP exercise to assess the capabilities of State and local offsite emergency preparedness organizations in implementing their RERPs and procedures to protect public health and safety during a radiological emergency involving SPS. The purpose of this exercise report is to present the results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

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

Exercise reports are provided to the NRC, participating States, and FEMA Headquarters. State and local governments use the findings contained in the reports to plan, train, and improve emergency response capabilities.

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

- NUREG-0654/FEMA-REP-1, Rev. 1, *Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants* (November 1980);
- FEMA-REP-14, *Radiological Emergency Preparedness Exercise Manual* (September 1991); and
- FEMA-REP-15, *Radiological Emergency Preparedness Exercise Evaluation Methodology* (September 1991).

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

Section IV of this report, "Exercise Evaluation and Results," presents detailed information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. This section also contains (1) descriptions of all Deficiencies and ARCAs assessed during this exercise, recommended corrective actions, and the State and local government responses, and (2) descriptions of ARCAs assessed during previous exercises and the status of the ORO's efforts to resolve them.

III. EXERCISE OVERVIEW

This section contains data and basic information relevant to the August 3, 1999, exercise to test the offsite emergency response capabilities in the area surrounding the SPS. This section of the exercise report includes a description of the plume exposure pathway EPZ, a listing of all participating jurisdictions and functional entities evaluated, and a tabular presentation of the times of actual occurrence of key exercise events and activities.

A. Plume Emergency Planning Zone Description

The SPS, located on the James River in Surry County, Virginia, is owned and operated by Dominion Generation. Two pressurized water reactors generate an electrical output of 915 megawatts each. Unit 1 received its license in July 1972 and began commercial operation in December 1972. Unit 2 was licensed in March 1973 and began commercial operation in May 1973. An Independent Spent Fuel Storage Installation at SPS is used to store the spent fuel produced by the two units. The spent fuel is stored in sealed dry storage surface casks placed on concrete slabs within the fenced-in area onsite.

The site encompasses 840 acres south of, and adjacent to, the Hog Island Wildlife Management Area and is bordered by the James River on both sides of the peninsula. The coordinates are approximately 76°41'50" W and 37°10'00" N. The site is at the end of State Route 650, 8 miles from the town of Surry, 7 miles south of Colonial Williamsburg, and 4.5 miles west-northwest of Fort Eustis.

The topography within 10 miles of the site covers parts of Surry, Isle of Wight, York, and James City counties and parts of the cities of Newport News and Williamsburg. Surry and Isle of Wight counties are predominantly rural and characterized by farmland, wooded tracts, and marshy wetlands. York and James City counties and the cities of Newport News and Williamsburg are more urban.

The tip of the peninsula, north of the site, is very marshy and nearly divided from the remainder of the peninsula by numerous streams and creeks. The ground surface at the site is generally flat, with banks sloping down to the river and to a wildlife management area. Preconstruction elevation within the site boundaries ranges from river level to a maximum of 39 feet. Station ground level has been established at an elevation of 26.5 feet above the U.S. Coast Guard and U.S. Geological Survey mean sea level datum at Hampton Roads, Virginia. Beyond the site boundaries, elevations within a 5-mile radius range from 40 to 60 feet. Farther away, the countryside is generally flat, with few elevations higher than 200 feet within 50 miles. Much of the region is characterized by marshes, extensive swamps, small streams, and pocosins. Water tables are very near the surface throughout the entire area, accounting for the large amount of surface water. Drainage throughout the area is toward Hampton Roads and the mouth of Chesapeake Bay.

The regions to the north, south, and west of the site, except for the Williamsburg area, are principally rural and agricultural.

The major road system on the north side of the James River runs from northwest to southeast, parallel to the peninsula. The expected primary routes for evacuation north of the James River are Interstate 64 and U.S. Route 60 for northwest-southeast traffic and the Colonial Parkway as a feeder for northbound traffic on U.S. Route 17. Chessie System railroad tracks run parallel to the northwest-southeast road and separate U.S. Route 60 from Interstate 64 and State Road 143. State Roads 199 and 258 cross the tracks, and an emergency railroad crossing is located at Grove near Busch Gardens. The expected primary routes south of the James River are State Road 10 for northwest-southeast traffic and State Road 460.

The 10-mile EPZ contains an estimated residential population of 121,167 and an institutionalized population of 22,349. According to 1990 census data, 23,756 people reside within a 5-mile radius of the site. Several large tourist-oriented sites lie within the 10-mile EPZ, such as historic Williamsburg and Jamestown, and Busch Gardens and Water Country USA. Busch Gardens could have in excess of 50,000 visitors daily.

A total of 61 sirens are located throughout the 10-mile EPZ. Where there is no siren coverage, route alerting is conducted by dispatch teams using mobile sirens and a public address system. Exceptions for these areas must be granted by FEMA.

B. Exercise Participants

The following agencies and organizations participated in the SPS exercise on August 3, 1999.

COMMONWEALTH OF VIRGINIA

Commonwealth of Virginia Department of Emergency Medicine
Commonwealth of Virginia Department of Emergency Services
Commonwealth of Virginia Department of Health – Radiological Health
Program
Commonwealth of Virginia State Police
Commonwealth of Virginia Department of Transportation
Commonwealth of Virginia Department of Health/Bureau of Radiological
Health
Medical College of Virginia Hospitals/Virginia Commonwealth University
Radiation Safety Section of the Commonwealth of Virginia
Office of Environmental Health and Safety

RISK JURISDICTIONS

CITY OF NEWPORT NEWS

City of Newport News Assessor's Department
City of Newport News Budget and Evaluation
City of Newport News City Farm
City of Newport News City Manager's Office
City of Newport News Codes Compliance Department
City of Newport News Department of Health and Human Services
City of Newport News Department of Planning and Development
City of Newport News Emergency Management Agency
City of Newport News Engineering Department
City of Newport News Fire Department
City of Newport News HAZMAT Unit
City of Newport News Parks Department
City of Newport News Personnel Department
City of Newport News Police Department
City of Newport News Public Library
City of Newport News Public Utilities
City of Newport News Purchasing Department
City of Newport News Social Services Department
City of Newport News Water Works
Commonwealth of Virginia Agriculture Cooperative Extension
Commonwealth of Virginia Department of Emergency Services
Woodside High School

CITY OF WILLIAMSBURG

City of Williamsburg Police
City of Williamsburg Community Hospital
City of Williamsburg Department of Emergency Services
City of Williamsburg Department of Health
City of Williamsburg Department of Public Works
City of Williamsburg Department of Social Services
City of Williamsburg Fire Department
City of Williamsburg Fire/Rescue
City of Williamsburg Police Department
City of Williamsburg-James City County Public School and
Transportation
College of William and Mary

ISLE OF WIGHT COUNTY

Hanover County HAZMAT
Isle of Wight County Administrator's Office
Isle of Wight County Department of Health
Isle of Wight County Police Department
Isle of Wight County Public School System
Isle of Wight County Sheriff's Department
Isle of Wight Department of Social Services
Virginia Department of Emergency Services
Virginia Department of Transportation
Virginia Senior State Trooper

JAMES CITY COUNTY

Clara Byrd Baker Elementary School
Eastern State Hospital
James City County Community Services
James City County Emergency Services
James City County Fire Department
James City County Police Department
James City County Public Information
James City County Transportation School Division
James City County Extension Service
James City County Facility and Fleet Maintenance
James City County Health Department
James City County Social Services Department
James City County Transit Authority
James City County/Williamsburg School District

SURRY COUNTY

Commonwealth of Virginia Department of Transportation
Commonwealth of Virginia State Police
Petersburg Health Department
Surry County Agriculture and Cooperative Extension
Surry County Board of Supervisors
Surry County Department of Health (Crater District)
Surry County Department of Social Services
Surry County Parks and Recreation
Surry County Planning Department
Surry County Public School System
Surry County School District
Surry County Sheriff's Office

NEW KENT COUNTY

Commonwealth of Virginia Agriculture Cooperative Extension
Commonwealth of Virginia Department of Transportation
Commonwealth of Virginia State Police
Henrico Area Mental Health Center
New Kent County Board of Supervisors
New Kent County Department of Public Safety
New Kent County Department of Social Services
New Kent County Health Department
New Kent County School Board
New Kent County Sheriff

PRIVATE/VOLUNTEER ORGANIZATIONS

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

Amateur Radio Emergency Services (ARES)
American Red Cross (ARC)
 Greater Richmond Chapter
 Poquoson Chapter
 Chapter 46464
 Colonial Virginia Chapter
Dendren Volunteer Fire Department
Isle of Wight County Volunteer Rescue Squad
New Kent County Volunteer Fire Department
Providence Forge Volunteer Rescue
Radio Amateur Civil Emergency Services (RACES)
Rushmere Volunteer Fire Department
Smithfield Volunteer Fire Department
Surry County Volunteer Fire Department
Surry County Volunteer Rescue Squad
Western Tidewater Radio Associates, Inc.
WTKR TV News Channel 3

C. Exercise Timeline

Table 1, on the following pages, presents the times at which key events and activities occurred during the SPS exercise on August 3, 1999.

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: August 3, 1999, Surry Power Station

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken												
		Virginia State EOC	Local Emergency Ops. Facility	Isle of Wight County EOC	James City County EOC	City of Newport News EOC	Surry County EOC	City of Williamsburg EOC	York County EOC	Charles City County EOC	City of Hampton EOC	New Kent County EOC	City of Poquoson EOC	JPIC
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	1009	1017	N/A	1016	1023	1015	1017	1014	1024	1037	1038	1035	1034	1027
Site Area Emergency	1143	1147	1143	1152	1146	1148	1147	1152	1155	1143	1158	1201	1154	1143
General Emergency	1219	1225	1219	1223	1225	1223	1247	1222	1222	1236	1240	1236	1240	1221
Simulated Radiation Release Started	1211	1225	1211	1223	1225	1223	1222	1222	1222	1239	1245	1236	1240	1340
Simulated Radiation Release Terminated	1310	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		1058	1026	1032	1050	1100	1100	1105	1100	N/A	N/A	N/A	N/A	1046
Declaration of State of Emergency		1215	1311	1307	1245	1333	1217	1245	1215	N/A	N/A	N/A	N/A	1215
Exercise Terminated		1410	1400	1410	1358	1400	1400	1411	1405	N/A	N/A	N/A	N/A	1400
Early Precautionary Actions: Evac. Schools Place animals on stored feed and water. (10-mile EPZ)		1306	1311	N/A	1130 1244*	1210	1232 1306	1130	1120 1306	N/A	N/A	N/A	N/A	N/A
1st A&N Decision (State [made]; local [received]) Start Primary Route Alerting Shelter in place zones / Evacuate		1306	1311	1309 1307	1306 1308 1241*	1310	1306 1307	N/A	1306	N/A	N/A	N/A	N/A	N/A
1st Siren Activation		1312	N/A	1310	1312	1310	1310	N/A	1312	N/A	N/A	N/A	N/A	1312
1st EAS or EBS Message		1313	N/A	N/A	1314	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1315
2nd A&N Decision (State [made]; local [received]) Shelter: Evacuate:		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2nd Siren Activation		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2nd EAS or EBS Message		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Precautionary Actions:		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KI Administration Decision Time (State): Time Emergency Workers Advised <u>not</u> to Take		1245	1245	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KI Administration Decision: Emergency Workers Advised <u>to</u> Take		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

LEGEND: S - Support Jurisdiction

D - Decision-Making Jurisdiction

A - Activating Jurisdiction

N/A - Not Applicable

* NOTE: James City Co. Proceeded with implementation of the PAR's before the Governor's Decision at 1306.

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 August 3, 1999, exercise. The exercise was held to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding the SPS.

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

A. Summary Results of Exercise Evaluation

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

M	-	Met (no Deficiency or ARCA(s) assessed)
D	-	Deficiency(ies) assessed
A	-	ARCA(s) assessed (not affecting public health and safety)
U	-	Unresolved ARCA(s) from prior exercises
N	-	Not demonstrated as scheduled (reason explained in Section IV.B.)
Blank	-	Not scheduled for demonstration

TABLE 2. SUMMARY RESULTS OF 1999 EXERCISE EVALUATION

DATE AND SITE: August 3, 1999, Surry Power Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33			
COMMONWEALTH OF VIRGINIA																																				
EMERGENCY OPERATIONS CENTER				M					U	M	M			M										M								A		U		
JOINT PUBLIC INFORMATION CENTER	M											M	M																							
LOCAL EMERGENCY OPERATIONS FACILITY (Bureau of Radiological Health)				M	M		M		M					M																						
STATE FIELD MONITORING TEAM 1	M			M	M	A		M						M																						
STATE FIELD MONITORING TEAM 2	M			M	M	A		A						M																						
STATE MOBILE LABORATORY	M			M	M	M																												A		
MEDICAL SERVICES – TRANSPORTATION (Surry Vol. Rescue Squad '97 & '99)					M																		M													
MEDICAL SERVICES – TRANSPORTATION (Isle of Wight Vol. Rescue Squad '96)																																				
MEDICAL SERVICES – FACILITY (Medical College of Virginia '97 & '99)					M																														A	
MEDICAL SERVICES – FACILITY (Riverside Hospital '96 & '98)					U																														U	
RISK AND HOST JURISDICTIONS																																				
ISLE OF WIGHT COUNTY																																				
EMERGENCY OPERATIONS CENTER	U	M	A	M	M					M		M	M	M	M																					
TRAFFIC AND ACCESS CONTROL				A	M									M					M																	
FIELD MONITORING TEAM				A	M	A								M																						
EVACUATION ASSEMBLY CENTER (Smithfield High School '95, '97, & '99)					A																															
EVACUATION ASSEMBLY CENTER (Windsor Elementary School)																																				
PRIMARY ROUTE ALERTING (Route D '97 & Route B '99)				A	M					M				M																						
JAMES CITY COUNTY																																				
EMERGENCY OPERATIONS CENTER	M	M	D	M	M					M		M	M	M	M																				U	
TRAFFIC AND ACCESS CONTROL				M	M										M																					M
FIELD MONITORING TEAM				M	M	A									M																					

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

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

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

TABLE 2. SUMMARY RESULTS OF 1999 EXERCISE EVALUATION

DATE AND SITE: August 3, 1999, Surry Power Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33				
JAMES CITY COUNTY (Cont'd)																																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (Clare Byrd Baker Elementary '99)					A									A		M																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (James Blair Intermediate)																																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (Bruton Heights Elementary)																																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (Mathew Whaley School)																																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (Rawis Bird Elementary)																																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (Berkeley Elementary)																																					
JAMES CITY/WILLIAMSBURG SCHOOL SYSTEM (Walsingham Academy)																																					
HOST: CHARLES CITY COUNTY																																					
EMERGENCY OPERATIONS CENTER	M	M	M	M								M	M																								
EVACUATION ASSEMBLY CENTER (Charles City Co. High School '95)																																			U		
EVACUATION ASSEMBLY CENTER (Charles City Co. Middle School)																																					
HOST: CITY OF HAMPTON																																					
EMERGENCY OPERATIONS CENTER	M	M	M	M								M	M																								
EVACUATION ASSEMBLY CENTER (Hampton Coliseum '93 & '99)					M																														A	M	A
CITY OF NEWPORT NEWS																																					
EMERGENCY OPERATIONS CENTER	M	M	A	M	M							A	A	A	M	A																					
EAS STATION (WGH)																																					
TRAFFIC AND ACCESS CONTROL																																					
FIELD MONITORING TEAM				M	M	A									M																						
EVACUATION ASSEMBLY CENTER (Huntington Middle School)																																					
EVACUATION ASSEMBLY CENTER (Warwick High School '97)																																				U	
EVACUATION ASSEMBLY CENTER (Deer Park Elem. School)																																					

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

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

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

TABLE 2. SUMMARY RESULTS OF 1999 EXERCISE EVALUATION

DATE AND SITE: August 3, 1999, Surry Power Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
CITY OF NEWPORT NEWS (Cont'd)																																		
EVACUATION ASSEMBLY CENTER (S. Morrison Elem. School)																																		
SCHOOL SYSTEM (Lee Hall Elementary)																																		
SCHOOL SYSTEM (Dutrow Elementary)																																		
SCHOOL SYSTEM (Reservoir Middle School)																																		
SCHOOL SYSTEM (Dozier Middle School)																																		
SCHOOL SYSTEM (Richneck Elementary '99)					A									M		A																		
SCHOOL SYSTEM (Epes Elementary)																																		
SCHOOL SYSTEM (Denbigh Elementary)																																		
SCHOOL SYSTEM (Denbigh High School)																																		
SCHOOL SYSTEM (R.O. Nelson Elementary)																																		
SCHOOL SYSTEM (Sanford Elementary)																																		
SCHOOL SYSTEM (Jenkins Elementary)																																		
SCHOOL SYSTEM (Menchville High School)																																		
SCHOOL SYSTEM (B.C. Charles Elementary)																																		
SCHOOL SYSTEM (McIntosh Elementary)																																		
SCHOOL SYSTEM (Woodside High School)																																		
SURRY COUNTY																																		
EMERGENCY OPERATIONS CENTER	M	M	A	M	M					M		M	M	M	M																			
TRAFFIC AND ACCESS CONTROL				M	M									M				M																
FIELD MONITORING TEAM				M	M	A								M																				
EVACUATION ASSEMBLY CENTER (Surry Co. High School)																																		
EVACUATION ASSEMBLY CENTER (Surry Co. Elem. School '95)																																		
EVACUATION ASSEMBLY CENTER (L.P. Jackson Middle School '97 & '99)					A														A	M			A											
PRIMARY ROUTE ALERTING (Route H '97 & Route B '99)				M	M					M				M																				

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

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

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

TABLE 2. SUMMARY RESULTS OF 1999 EXERCISE EVALUATION

DATE AND SITE: August 3, 1999, Surry Power Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33		
HOST: NEW KENT COUNTY																																			
EMERGENCY OPERATIONS CENTER	M	M	M	M								M	M																						
EVACUATION ASSEMBLY CENTER (New Kent Co. High School '93 & '99)					M													A	M			A													
EVACUATION ASSEMBLY CENTER (New Kent Co. Middle School '95)																																			
CITY OF WILLIAMSBURG																																			
EMERGENCY OPERATIONS CENTER	M	M	A	M	M					M		M	M	M	A																				
FIELD MONITORING TEAM				M	M	M							M																						
TRAFFIC AND ACCESS CONTROL				M	M								M					A																	
YORK COUNTY																																			
EMERGENCY OPERATIONS CENTER	M	M	A	M	M					M		A	M	M	M																				
TRAFFIC AND ACCESS CONTROL				M	M								M					M																	
FIELD MONITORING TEAM				M	M	A							M																						
SCHOOL SYSTEM (Bruton High School '97)																																			
SCHOOL SYSTEM (Magruder Elementary)																																			
SCHOOL SYSTEM (Walter Miller Elementary)																																			
SCHOOL SYSTEM (Queen's Lake Middle School '99)					M									M		M																			
EVACUATION ASSEMBLY CENTER (Tabb High School)																																			
EVACUATION ASSEMBLY CENTER (Grafton Middle/High School '97)																																			
HOST: CITY OF POQUOSON																																			
CITY EMERGENCY OPERATIONS CENTER	M	M	M	M								M	M																						
EVACUATION ASSEMBLY CENTER (Poquoson High School)																																			

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

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

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

TABLE 2. SUMMARY RESULTS OF 1999 EXERCISE EVALUATION

DATE AND SITE: *August 3, 1999, Surry Power Station*

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	
INGESTION JURISDICTIONS																																		
COMMONWEALTH OF VIRGINIA																																		
CHARLES CITY COUNTY EOC																																		
CHESAPEAKE CITY EOC ('91)			U								U																							
CHESTERFIELD COUNTY EOC																																		
COLONIAL HEIGHTS EOC																																		
DINWIDDIE COUNTY EOC																																		
ESSEX COUNTY EOC																																		
FRANKLIN CITY EOC																																		
GLOUCESTER COUNTY EOC																																		
GREENSVILLE COUNTY EOC ('91)													U																					
HAMPTON CITY EOC																																		
HANOVER COUNTY EOC																																		
HENRICO COUNTY EOC																																		
HOPEWELL CITY EOC																																		
ISLE OF WIGHT COUNTY EOC																																		
JAMES CITY COUNTY EOC													U																					
KING & QUEEN COUNTY EOC													U																					
KING WILLIAM COUNTY EOC																																		
LANCASTER COUNTY EOC ('91)	U											U																						
MATHEWS COUNTY EOC ('91)																																		
MIDDLESEX COUNTY EOC ('91)				U																														
NEW KENT COUNTY EOC																																		
NEWPORT NEWS CITY EOC																																		
NORFOLK CITY EOC																																		
NORTHAMPTON COUNTY EOC																																		
NORTHUMBERLAND COUNTY EOC																																		

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

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

Blank = Not scheduled for demonstration
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TABLE 2. SUMMARY RESULTS OF 1999 EXERCISE EVALUATION

DATE AND SITE: August 3, 1999, Surry Power Station

JURISDICTIONS/LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33		
INGESTION JURISDICTIONS (Cont'd)																																			
PETERSBURG CITY EOC ('91)	U																																		
POQUOSON CITY EOC																																			
PORTSMOUTH CITY EOC																																			
PRINCE GEORGE COUNTY EOC																																			
RICHMOND CITY EOC																																			
RICHMOND COUNTY EOC																																			
SOUTHAMPTON COUNTY EOC ('91)											U																								
SUFFOLK CITY EOC																																			
SURRY COUNTY EOC																																			
SUSSEX COUNTY EOC																																			
VIRGINIA BEACH CITY EOC ('91)				U																															
WILLIAMSBURG CITY EOC																																			
YORK COUNTY EOC																																			
NORTH CAROLINA																																			

LEGEND: M = Met (no Deficiency or ARCA(s) assessed) A = ARCA(s) assessed (not affecting health and safety of public) Blank = Not scheduled for demonstration
 D = Deficiency assessed U = Unresolved ARCA(s) from prior exercises N = Not demonstrated as scheduled (reason explained in Section IV.B.)

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 terms relevant to objective status demonstration.

- **Met** – Listing of the demonstrated exercise objectives under which no Deficiencies or ARCAs were assessed during this exercise, and under which no ARCAs assessed during prior exercises remain unresolved.
- **Deficiency** – Listing of the demonstrated exercise objectives under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions, if a Deficiency has been identified.
- **Area Requiring Corrective Action** – Listing of the demonstrated exercise objectives under which one or more ARCAs were assessed during the current exercise or under which ARCAs assessed during previous exercises remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.
- **Not Demonstrated** – Listing of the exercise objectives that were not demonstrated as scheduled during this exercise and the reason(s) they were not demonstrated.
- **Prior Issues – Resolved** – Descriptions of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.
- **Prior Issues – Unresolved** – Descriptions of ARCAs assessed during previous 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 discussed in this report:

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

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

The identifying numbers for Deficiencies and ARCAs include the following elements, each separated by a hyphen (-):

- **Plant Site Identifier** – A two-digit number corresponding to the Utility Billable Plant Site Codes.
- **Exercise Year** – The last two digits of the year the exercise was conducted.
- **Objective Number** – A two-digit number corresponding to the objective number in FEMA-REP-14.
- **Issue Classification Identifier** – (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.
- **Exercise Identification Number** – A separate two- (or three-) digit indexing number assigned to each issue identified in the exercise.

1. COMMONWEALTH OF VIRGINIA

1.1 EMERGENCY OPERATIONS CENTER

- a. MET: Objectives 4, 10, 11, 14, and 23
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: Objective 30

Issue No.: 62-99-30-A-01

Description: The extent-of-play agreement requires that a shift change be demonstrated by the Public Information Officer (PIO). However, only the PIO assistant demonstrated a shift change during the exercise. (NUREG-0654, N.1.a.)

Recommendation: The extent-of-play agreement regarding shift change demonstrations should be followed during the next exercise.

Schedule of Corrective Actions: We are not in concurrence with this finding. The PIO representative that demonstrated a shift change during the exercise was acting as the PIO on duty during the shift change. The requirements on the extent of play were met during this shift change. We see no reason why the PIO on duty was not sufficient in meeting this requirement.

FEMA Response: Review of the evaluator's narrative revealed the PIO representative, not the PIO, was involved in the shift change that occurred during the Alert, 54 minutes after the exercise started. According to FEMA-REP-14, page D.30-2, a shift change should be demonstrated midway through the exercise, after individuals had the opportunity to demonstrate their capability in handling their position(s) and responsibilities. Thus, the issue will remain.

- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES – RESOLVED: Objective 11

Issue No.: 62-97-11-A-02

Description: Several zones (York County and Williamsburg City) that were supposed to take shelter were not crossed out from the pre-scripted "Evacuated Zones" attachment to an Emergency Alert System (EAS) message. Thus, listeners in those zones would have been instructed to take shelter *and* to

evacuate. The error was discovered and reported by a local jurisdiction, but no corrected message was issued by the State. (NUREG-0654, E.7.)

Corrective Action Demonstrated: All of the correct zones to be sheltered or evacuated were shown on the attachments to the EAS message.

Issue No.: 62-97-11-A-03

Description: A local jurisdiction (Surry County) did not receive hard copy (fax) of the first EAS message and follow-on news releases from the State. (NUREG-0654, E.7.)

Corrective Action Demonstrated: Local jurisdictions and JPIC received the EAS message and attachments and four news releases.

f. **PRIOR ISSUES – UNRESOLVED:** Objective 9

Issue No.: 62-97-09-A-01

Description: The (State) Bureau of Radiological Health (BRH) staff did not promptly communicate to local jurisdictions the Health Commissioner's decision authorizing KI for emergency workers. A jurisdiction that was primarily affected by the decision was not told of the decision until their representatives called BRH on their own initiative 40 minutes after the decision. The BRH did not transmit the Report of KI Decision and Authorization until an hour after the decision. (NUREG-0654, J.9.)

Reason ARCA Unresolved: The decision for emergency workers to take KI was not made during this exercise; therefore this issue will be carried over to the next exercise.

Recommendation: The scenario for the next exercise should elicit the need for KI to be taken by emergency workers.

Schedule of Corrective Actions: The extent-of-play agreement during the next exercise will include the decision for emergency workers to take KI.

1.2 **JOINT PUBLIC INFORMATION CENTER**

- a. **MET:** Objectives 1, 12, and 13
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None

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

1.3 LOCAL EMERGENCY OPERATIONS FACILITY (Bureau of Radiological Health)

- a. MET: Objectives 4, 5, 7, 9, and 14
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES – RESOLVED: None
- f. PRIOR ISSUES – UNRESOLVED: None

1.4 STATE FIELD MONITORING TEAM 1

- a. MET: Objectives 1, 4, 5, 8, and 14
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: Objective 6

Issue No.: 62-99-06-A-02

Description: State Field Monitoring Team 1 (FMT-1) was not aware of the threshold limit for determining whether contamination has occurred. The team incorrectly stated that any area where measurements greater than background were obtained was determined to be contaminated. The FMT's emergency procedures (Item 7 in Appendix 17.1, Attachment 1,) states that a reading greater than 0.1 milliRoentgen (mR/h) above background indicates contamination. (NUREG-0654, I.10.)

Recommendation: The FMTs should review their procedures more frequently and follow their plan.

Schedule of Corrective Actions: Additional training should be provided to the FMTs to ensure knowledge of their procedures for threshold limit for determining contamination and review of their plan.

Issue No.: 62-99-06-A-03

Description: State FMT-1 was not equipped with a high-range survey instrument capable of measuring up to 100 Roentgen per hour (R/h) as required by Appendix 17.1, Attachment 4, of their procedures. An Eberline RO-2 ion chamber was available at the mobile laboratory located at the staging area, but was not provided to the FMTs. Therefore, the measurement capability in the field was limited to a 2 R/h radiation level. (NUREG-0654, I.8.)

Recommendation: The FMTs should be provided with a high-range survey instrument, in accordance with their procedures.

Schedule of Corrective Actions: In future exercises, FMTs will be provided with high-range survey instruments in accordance with their procedures.

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

1.5

STATE FIELD MONITORING TEAM 2

- a. **MET:** Objectives 1, 4, 5, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 6 and 8

Issue No.: 62-99-06-A-04

Description: The Monitoring and Sampling Equipment Checklist in Appendix 17.1, Attachment 4 of the FMT's emergency procedures lists high-range survey instrument under the heading, "Instrumentation." No high-range gamma survey instrument was issued to FMT-2. (NUREG-0654, I.8.)

Recommendation: The FMTs should be provided with a high-range survey instrument, in accordance with their procedures.

Schedule of Corrective Actions: In future exercises, FMTs will be provided with high-range survey instruments in accordance with their procedures.

Issue No.: 62-99-08-A-05

Description: FMT-2 did not follow their emergency plan and procedures. The following problems were observed:

- The FMT members did not purge the sampling cartridge as required by Attachment 7 of Appendix 17.1, page 17.1-12, "Air Sample Procedure" Item 9, which states, "Purge the adsorber medium cartridge by turning on the air sampler for 30 seconds to remove noble gas molecules."
- The petri dish containing the particulate sample was placed by FMT-2 in the same plastic bag as the cartridge. Page 17.1-13, Attachment 7 of Appendix 17.1, "Air Sample Procedure," Item 11 states, "Place petri dish and the cartridge into separate plastic bags."
- FMT-2 members did not survey the bagged cartridge and petri dish, and therefore could not report any measurements to the LEOF. Page 17.1-13, Attachment 7 of Appendix 17.1 entitled, "Air Sample Procedure," Item 16 states, "Survey the bagged cartridge and petri dish. Report any levels above background to the Local Emergency Operations Facility (LEOF)." (NUREG-0654, I.9.)

Recommendation: The FMT-2 members should follow their written procedures during the next exercise.

Schedule of Corrective Actions: The FMTs will review plans and procedures and refer to their procedures for the next exercise.

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

1.6 STATE MOBILE LABORATORY

- a. **MET:** Objectives 1, 4, 5, and 6

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 25

Issue No.: 62-99-25-A-06

Description: Proper contamination control procedures were not followed at the mobile laboratory. The manner in which samples were handled could have allowed the spread of contamination from the inner sample bags and field team report form to the laboratory countertop, analytical detector, and outside sample storage area. (NUREG-0654, I.8.)

Recommendation: Laboratory personnel should follow correct procedures for handling potentially contaminated sample bags and their contents.

Schedule of Corrective Actions: Laboratory personnel will review their procedures to ensure that potentially contaminated sample bags are handled correctly.

Issue No.: 62-99-25-A-07

Description: The Laboratory Analysis Report form used to transmit data to the LEOF does not indicate the Lower Limit Detectable (LLD) or sample error for the samples analyzed. (NUREG-0654, I.8.)

Recommendation: The Laboratory Analysis Report form should be revised to include the LLD and sample error data, or the written procedure under Appendix 17.5 should be modified to reflect the intended report content.

Schedule of Corrective Actions: The Laboratory Analysis Report form will be revised to reflect the LLD and the sample error data in accordance with the plan.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES – RESOLVED:** None

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

1.7 MEDICAL SERVICES – TRANSPORTATION (Surry Volunteer Rescue Squad)

- a. **MET:** Objectives 5 and 20
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

1.8 MEDICAL SERVICES – FACILITY (Medical College of Virginia Hospital)

- a. **MET:** Objective 5
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 21

Issue No.: 62-99-21-A-08

Description: The Tyvex hood used by the medical monitoring staff at the Medical College of Virginia Hospital (MCVH) does not adequately cover the monitors' hair; one staff member repeatedly pushed her hair off of her forehead and out of her eyes with her gloved hand. This action may result in contamination of the monitors' hair, eyes, and forehead. (NUREG-0654, L.1.)

Recommendation: The personnel in the radiological monitoring area should wear hoods that effectively cover their hair to prevent potential contamination.

Schedule of Corrective Actions: Surgical cap usage will be considered in the future to prevent possible contamination of the hair.

Issue No.: 62-99-21-A-09

Description: The probe was not covered with plastic when used to monitor personnel exiting the Radiological Emergency Area (REA) at Medical College of Virginia Hospital/Virginia Commonwealth University (MCVH/VCU). The "Decontamination of Patients" procedure (page 21,

paragraph 3.c.) in the *Radiological Emergency Plan, MCVH/VCU – VIRGINIA POWER* (dated June 29, 1999) requires that the instrument probe be covered with plastic when monitoring. (NUREG-0654, L.1.)

Recommendation: The instrument probe should be covered with plastic before beginning monitoring, as required by the plan.

Schedule of Corrective Actions: Personnel in the radiological monitoring area will review their plan and procedures prior to the next exercise to determine the need or appropriateness of covering the probe in future exercises.

Issue No.: 62-99-21-A-10

Description: The REA at the MCVH/VCU had three containers for contaminated items: two metal trash cans lined with red bio-hazard bags (appropriately tagged) and a plastic bag placed on a linen stand (not appropriately tagged). Page 20, paragraph 3 of the *Radiological Emergency Plan, MCVH/VCU – VIRGINIA POWER* (dated June 29, 1999) requires that large plastic bags placed on linen stands and tagged for radioactive waste be used to collect contaminated items. (NUREG-0654, L.1.)

Recommendation: Monitoring personnel should follow the plan and ensure that containers are properly tagged and used.

Schedule of Corrective Actions: The waste containers in the controlled area are considered contaminated. The waste is labeled upon sealing of the bags. The wire linen containers are used to minimize radioactive waste production. They also conserve space, which is important in the controlled area. Waste will be labeled according to the plan.

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

2. **RISK JURISDICTIONS**

2.1 ISLE OF WIGHT COUNTY

2.1.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 2, 4, 5, 10, 12, 13, 14, and 15
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 3

Issue No.: 62-99-03-A-11

Description: Reporting of the survey readings collected by the local FMTs to the LEOF/Bureau of Radiological Health (BRH) Field Team Coordinator (FTC) was inadequate. Isle of Wight County Emergency Operations Center (EOC) staff never contacted the FTC concerning FMT availability and never reported survey readings from the FMTs, as required by the Isle of Wight County RERP. (NUREG-0654, I.7. and I.8.)

Recommendation: EOC staff should follow the Radiological Officer's Procedure, Appendix 6 in the Isle of Wight County RERP.

Schedule of Corrective Actions: The EOC staff will receive additional training and review procedures as set forth in the Isle of Wight County RERP.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objectives 12 and 13

Issue No.: 62-97-12-A-04

Description: The second news release by the Isle of Wight PIO incorrectly stated that zone 11 was to be evacuated when this area was only directed to shelter in place. The actual area to be evacuated in the Isle of Wight's portion of the 10-mile EPZ was zone 9, which had previously been directed to shelter in place. (NUREG-0654, E.7.)

Corrective Action Demonstrated: Press release #3, issued at 1245 at the Isle of Wight County EOC, accurately stated that the Governor had ordered the evacuation of all individuals in Zone 9 and the sheltering of individuals in Zones 11 and 13.

Issue No.: 62-95-13-A-14

Description: The requirement that one person with one telephone fulfill the consolidated responsibilities of the rumor control function and PIO is unrealistic. Because of this requirement, the PIO missed a rumor control call, while he was out of the room conducting a press briefing, and created unnecessary delays and confusion. (NUREG-0654, G.4.a., G.4.b., and G.4.c.)

Corrective Action Demonstrated: Separate rumor control and PIO staff were present at the Isle of Wight County EOC. As a result, no rumor control calls were missed.

f. PRIOR ISSUES – UNRESOLVED: Objective 1

Issue No.: 62-95-01-A-12

Description: The American Red Cross, State Police, and Game and Island Fisheries, listed as participants in the Isle of Wight County RERP (April 1995), Attachment 13, page 45, of the Basic Plan, did not participate in the exercise. (NUREG-0654, N.1.a.)

Reason ARCA Unresolved: The State Police and Game and Island Fisheries, listed as participants in the current Isle of Wight County RERP (July 1999) Attachment 13, page 48, of the Basic Plan, did not participate. The American Red Cross did participate.

Recommendation: The State Police and Game and Island Fisheries should participate or the plan should be revised to reflect current needs.

Schedule of Corrective Actions: The Isle of Wight County RERP will be revised to reflect current needs of the county.

2.1.2 TRAFFIC AND ACCESS CONTROL

- a. MET:** Objectives 5, 14, and 17
- b. DEFICIENCY:** None
- c. AREAS REQUIRING CORRECTIVE ACTION:** Objective 4

Issue No.: 62-99-04-A-12

Description: Communications between staff at the staging area and the Isle of Wight EOC were not adequate, resulting in protective action decisions (PAD) and traffic control point/access control point (TCP/ACP) instructions not being promptly transmitted to the appropriate emergency personnel. Without adequate communications, emergency personnel cannot respond appropriately to protective action decisions and recommendations. (NUREG-0654, A.4. and F.2.)

Recommendation: A reliable primary communication system should be established at the staging area to ensure adequate communications with emergency workers.

Schedule of Corrective Actions: Emphasis will be placed on ensuring that a reliable primary communication system is devised at the staging area and the EOC to ensure clear and timely communication between emergency workers.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES – RESOLVED:** Objectives 5 and 17

Issue No.: 62-97-05-A-05

Description: The TCP/ACP officer, designated by the Isle of Wight County EOC Coordinator, was not fully knowledgeable on emergency worker exposure control. (NUREG-0654, K.3.b. and K.4.)

Corrective Action Demonstrated: The Virginia Senior State Trooper responsible for traffic and access control for this exercise was fully knowledgeable about emergency worker exposure control. He was aware that his dosimeter must be read every 30 minutes and the readings must be recorded on Form REC-1, that a 3 R reading must be reported to the EOC, that a 5 R reading required him to leave the area and notify the EOC that he left his location to proceed to the nearest Evacuation Assembly Center (EAC); and that a reading exceeding 8 R would require a decision about whether to proceed with voluntary lifesaving.

Issue No.: 62-97-17-A-06

Description: The officer did not know of any PADs in effect nor did he understand the procedure to follow for traffic impediments or evacuation procedures. (NUREG-0654, J.10.g. and J.10.h.)

Corrective Action Demonstrated: The Virginia Senior State Trooper responsible for traffic and access control was fully aware that he was at a general emergency (GE) during his TCP/ACP demonstration and that any traffic impediments required him to direct traffic to another road or remove the disabled vehicle by calling for a tow truck or pushing the vehicle to the side of the road in order to resume traffic flow. He was also aware that during an evacuation he is to deny access to anyone trying to enter an evacuated area.

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

2.1.3 **FIELD MONITORING TEAM**

a. **MET:** Objectives 5 and 14

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 4 and 6

Issue No.: 62-99-04-A-13

Description: Communications were not adequate between personnel at the Smithfield Fire House staging area and the Isle of Wight County EOC. For example, the exercise inject message to field the radiological monitoring team, which was to have been communicated during the Alert Emergency Classification Level (ECL), was not received until the GE ECL. Because of this, deployment of the county radiological FMT was delayed. (NUREG-0654, F.2.)

Recommendation: Communication difficulties between personnel at the Isle of Wight County EOC and the staging area (located in the upstairs conference room of the Smithfield Fire House) should be reviewed and resolved.

Schedule of Corrective Actions: Emphasis will be placed on communication during the next exercise. Personnel and controllers at the EOC and the staging area will focus on clear and concise exchange of information in a prompt manner to ensure accurate and appropriate actions by personnel in accordance with the plan.

Issue No.: 62-99-06-A-14

Description: The probe on the Ludlum survey instrument, used by the Isle of Wight FMT, was a Ludlum 44-9 (pancake type) instead of the 44-6

(open/closed window type) that is required for performing open- and closed-window radiation measurements. (NUREG-0654, I.8.)

Recommendation: FMTs should be issued the proper probe with their survey instruments. The equipment checklist in the plan should be revised to indicate the type of probe to be used with the survey instrument.

Schedule of Corrective Actions: Additional training will be provided to the FMTs to ensure the use of the correct survey instruments and the proper probes. In addition, the equipment checklist in the plan will be revised to indicate the type of probe to be used with each survey instrument. Training for the FMTs will include review of this checklist.

Issue No.: 62-99-06-A-15

Description: Only two of the four survey instruments assigned to the Isle of Wight FMT were operating during the exercise. (NUREG-0654, I.8.)

Recommendation: The defective survey instruments should be repaired or replaced.

Schedule of Corrective Actions: Procedures will be instituted to ensure that all survey instruments are in working condition when issued to each FMT.

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

2.1.4 **EVACUATION ASSEMBLY CENTER (Smithfield High School)**

- a. **MET:** None
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 5, 18, 19, and 22

Issue No.: 62-99-05-A-16

Description: No REC-1 forms were available for the monitors at the Isle of Wight EAC at Smithfield High School to record direct-reading dosimeter (DRD) assignment, initial readings, or half-hour interval readings, as required by the Isle of Wight County RERP. The monitors were not provided with a thermoluminescent dosimeter (TLD) or film badge, as required in Appendix 6, page 6-1 of the plan. (NUREG-0654, H.10. and K.3.a.)

Recommendation: The monitors should be provided with complete forms, and DRD readings should be recorded on the forms. Also, all monitors should receive and wear TLDs.

Schedule of Corrective Actions: Forms will be available to all monitors and training will be conducted in order to ensure that all forms are completed accurately.

Issue No.: 62-99-18/22-A-17

Description: The extent-of-play agreement required the monitoring of six (6) simulated evacuees; only two were monitored. (NUREG-0654, N.1.a.)

Recommendation: The extent-of-play agreement should be followed during the next exercise.

Schedule of Corrective Actions: The extent-of-play agreement will be followed during the next exercise to ensure that the correct number of simulated evacuees are monitored.

Issue No.: 62-99-18/22-A-18

Description: The portal monitor was not operational, and only one portable instrument was available for monitoring. At least four portable instruments are needed at this facility. (NUREG-0654, H.10. and J.12.)

Recommendation: The portal monitor should be repaired and the defective portable survey instruments should be repaired or replaced.

Schedule of Corrective Actions: The defective portal monitor as well as the defective portable survey instruments will be replaced prior to the next exercise.

Issue No.: 62-99-18/22-A-19

Description: No receipt for contaminated articles (Appendix 8, Attachment 3 of the plan) was available for marking evacuee or vehicle possessions found to be contaminated. (NUREG-0654, J.12.)

Recommendation: The appropriate form should be available at the EAC during the next exercise.

Schedule of Corrective Actions: The form "receipt for contaminated articles" (Appendix 8, Attachment 3 of the plan) will be available at the EAC for future exercises.

Issue No.: 62-99-19-A-20

Description: The EAC Supervisor was unaware of the capacity of the EAC or how many evacuees to expect. (NUREG-0654, J.10.h.)

Recommendation: The EAC Supervisor should be aware of the capacity of the facility and the expected number of evacuees. Additional training should be provided to the EAC Supervisor regarding the responsibilities of managing the facility.

Schedule of Corrective Actions: Additional training will be provided to the EAC Supervisor to ensure accurate knowledge of facility capacity and general responsibilities of managing the EAC.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objectives 5 and 18

Issue No.: 62-97-05-A-07

Description: The Isle of Wight EAC monitoring and decontamination personnel did not read and record readings from their DRDs every 30 minutes, as required by the Isle of Wight RERP, Appendix 8. (NUREG-0654, K.3.a. and K.4.)

Corrective Action Demonstrated: Dosimeters were read every 20 to 30 minutes and the readings were recorded.

Issue No.: 62-97-18-A-08

Description: EAC materials, as described in the Isle of Wight RERP, Appendix 8, Attachment 2, were not available in the Smithfield EAC, per the extent-of-play agreement for the exercise. (NUREG-0654, J.12.)

Corrective Action Demonstrated: EAC materials were available as required by Appendix 8, Attachment 2, of the RERP.

Issue No.: 62-97-18-A-09

Description: There are no trained female emergency workers to staff the monitoring and decontamination activities at the Isle of Wight County EAC. The State was previously notified of this weakness and a request was made for training for female workers. (NUREG-0654, J.12.)

Corrective Action Demonstrated: Two trained female emergency workers were available to perform monitoring and decontamination activities.

f. PRIOR ISSUES – UNRESOLVED: Objectives 18 and 19

Issue No.: SYX93-21R

Description: Signs were insufficient and inconsistent with the locations where the firefighters from the Smithfield Volunteer Fire Company demonstrated vehicle monitoring and decontamination. The signs did not distinguish between parking for clean and for contaminated vehicles. Parking signs did not identify the locations of the vehicle monitoring points and the vehicle decontamination area. (Objective 18; NUREG-0654, J.12.)

Reason ARCA Unresolved: Although there were many signs that clearly indicated the direction to the parking area, no signs were posted to indicate clean or contaminated parking or to identify the locations of the vehicle monitoring points and the vehicle decontamination areas.

Recommendation: Appropriate signs should be displayed at the next exercise.

Schedule of Corrective Actions: At the next exercise signs will be posted for monitoring and decontamination purposes which indicate clean or contaminated parking and to identify the locations of the vehicle monitoring points and the vehicle decontamination areas.

Issue No.: 62-97-18-A-10

Description: Evacuees were directed to the registration area without any identification or marking as to whether they had been monitored and were free of contamination. In the registration area, evacuees were required to provide information noting whether they were contaminated or to what level they were decontaminated. However, since evacuees were not given this information, included on the REC-2 form in accordance with Appendix 8, Section C, page 8-8 of the plan, they could not adequately answer all questions. (NUGEG-0654, J.10.h.)

Reason ARCA Unresolved: No identification or marking was provided to indicate whether evacuees had been monitored and were free of contamination.

Recommendation: The monitoring personnel at the EAC should receive additional training on following the procedures in Appendix 8, Section C.10, page 8-8 of the RERP.

Schedule of Corrective Actions: Additional training will be provided to personnel of the EAC to ensure knowledge of all procedures related to monitoring evacuees.

Issue No.: 62-95-19-A-17

Description: Security was not provided to ensure control of access to clean/contaminated parking of vehicles or to control activities within the EAC, as required by the Isle of Wight RERP.

During a radiological emergency, maintaining discipline and control is imperative and can only be ensured by the presence of identifiable authority, in the form of uniformed security forces. This job is particularly important in the operation of the EAC, where it is crucial to preserve order and control access of vehicles and personnel to ensure that the segregation of clean and contaminated activities is not compromised. The Isle of Wight RERP addresses this need and assigns the Isle of Wight Sheriff's Department to provide officers to control parking and activities internal to the EAC; this obligation requires at least three or four uniformed officers. During this exercise, only one officer was present; he was assigned traffic control duties at the street entrance to the Smithfield High School. This coverage is inadequate and not consistent with the Isle of Wight RERP, Appendix 8.B, pages 8.3-5. (NUREG-0654, J.10.h.)

Reason ARCA Unresolved: Adequate security was not provided to ensure control of clean/contaminated parking of vehicles; only one officer was present.

Recommendation: Additional officers should be provided during next exercise to ensure control of access to clean/contaminated vehicle parking and control EAC activities.

Schedule of Corrective Actions: Additional officers will be provided for security purposes at the EAC during the next exercise to secure the EAC and to control access to clean/contaminated vehicles.

2.1.5 PRIMARY ROUTE ALERTING

- a. **MET:** Objectives 5, 10, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 4

Issue No.: 62-99-04-A-21

Description: Communications were not adequate between personnel in the staging area and the Isle of Wight EOC, resulting in PAD and route alerting instructions not being promptly transmitted to the appropriate emergency personnel. This lack of communication could prevent emergency personnel from being adequately advised of the protective action decisions and recommendations. (NUREG-0654, F.2.)

Recommendation: A reliable primary communication system should be established at the staging area to ensure adequate communications with emergency workers.

Schedule of Corrective Actions: The current communications system will be reviewed and procedures will be instituted to ensure that a reliable primary communication system is in place.

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

2.2 JAMES CITY COUNTY

2.2.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 4, 5, 10, 12, 13, 14, and 15
- b. **DEFICIENCY:** Objective 3

Issue No.: 62-99-03-D-01

Description: At 1235, James City County EOC staff received and immediately began to implement protective action recommendations (PARs) to evacuate Zones 18A, B, C, and D, and 22A and B, and to shelter-in-place Zones 23 and 24. The governor confirmed the recommendations with a decision, which was received by the county at 1306; the sirens were sounded by 1312. Implementation actions taken by the county during the 31 minutes before the governor made a decision included two press releases containing protective actions. The first one (at 1241) advised all residents to take shelter in those zones being sheltered (which were not specified in the press release), and the second (at 1244) was a precautionary sheltering advisory for livestock and poultry. In addition, three buses and a van were dispatched (simulated) by the Transit Administrator to assist with evacuation of special populations.

The implementation activities are of concern because, if the governor had not concurred with the protective actions as recommended, or had changed the affected zones, the actions taken by the county before siren and EAS activation might have confused the public, possibly causing panic. The EOC also did not act in concert with the other risk counties. The County Plan states that James City County press releases to local media representatives will be coordinated with the PIO at the State Joint Public Information Center (JPIC), which was not done in this case. Coordinating with JPIC would have alerted the county PIOs that they were acting in advance of the governor's decision (James City County RERP, p. 25). Also, the Sample News Releases in the James City County Plan indicate that PARs are "ordered" by the governor (Appendix 2, Attachment 8). (NUREG-0654, A.1.d. and E.1.)

Recommendation: Before implementing PARs, the James City County Coordinator (and his deputy) should ensure that the governor has concurred with the recommendations and issued a decision. PADs should not be disseminated before the sirens are sounded and the EAS message disseminated, and before other risk counties are ready to proceed. The county should review and clarify its procedures and, in conjunction with the State and other risk counties, conduct a drill to test the process.

Remedial Action Demonstrated: The remedial exercise was conducted on August 31, 1999, at the James City County EOC. The required staff was prepositioned at the EOC. Notification was received at 0857 that a simulated GE condition had been declared by the SPS at 0849. Two simulated precautionary press releases had been released. These releases were coordinated with the State PIO at the JPIC. At 0859, the State EOC advised the county that the Governor was considering a PAD and a conference call would be initiated at 0908 to discuss the action. At 0905, the ESC advised the County PIO to put out a press release (simulated) that announced a press conference would be held at 0935 in the County Media Center. The State EOC initiated a conference call at 0909. The call included the specifics of the PAD recommendations being considered by the Governor, but a final decision had not yet been made. James City County concurred with the recommendations. At 0921, the State EOC staff notified the county that, at 0920, the Governor had ordered the PAD involving evacuation of Protective Action Zones in James City County. Simulated activation of the sirens and concurrent release of an EAS message concerning the PAD was accomplished at 0928. This message was also coordinated with the State PIO in the JPIC. A press conference was held in the James City County Media Center adjacent to the EOC at 0941, to provide an update of the situation. James City County EOC staff followed their plans and procedures during the implementation of their emergency response activities within the parameters of the extent-of-play agreement.

Schedule of Corrective Actions: A strategic review of county procedures for coordinating and implementing public protective actions will be conducted to ensure clarity and clear communication with the State and other risk jurisdictions for directing and controlling emergency operations in James City County, specifically related to PARs.

c. **AREAS REQUIRING CORRECTIVE ACTION: Objective 3**

Issue No.: 62-99-03-A-22

Description: The James City County EOC did not keep the FMT informed of wind direction and speed and of radioactive releases from the plant. They also did not provide the team with directions to the locations where monitoring should be performed. (NUREG-0654, I.7.)

Recommendation: The James City County EOC should inform the FMT of wind conditions and radioactive releases from the plant and provide clear instructions regarding monitoring locations.

Schedule of Corrective Actions: Procedures will be revised to guarantee clear communication between the EOC and the FMT. In addition, the FMT will be equipped with a map illustrating all monitoring locations.

Issue No.: 62-99-03-A-23

Description: Reporting of the local FMT survey readings to the FTC at the LEOF/BRH was inadequate. James City County contacted the FTC concerning FMT availability; however, survey readings from the FMTs were never reported. (NUREG-0654, I.7., and I.8.)

Recommendation: James City County EOC staff should follow the Radiological Officer's Procedure, Appendix 6 in the RERP.

Schedule of Corrective Actions: Training will be conducted with the James City County EOC staff to review their plan and procedures concerning the Radiological Officer's Procedures.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 11

Issue No.: 62-97-04-A-11

Description: The primary notification system at the James River Elementary School is the Voice Activation Receiver (VAR). The VAR is activated by the County EOC and was not operational during the exercise. However, the backup notification system operated without undue delay. (NUREG-0654, F.3.)

Corrective Action Demonstrated: The VAR system from the EOC was operational and functioned satisfactorily. An acknowledgement fax was received from the James River Elementary School.

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

2.2.2 TRAFFIC AND ACCESS CONTROL

- a. **MET:** Objectives 4, 5, 14, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

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

2.2.3 **FIELD MONITORING TEAM**

- a. **MET:** Objectives 4, 5, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 6

Issue No.: 62-99-06-A-24

Description: James City County FMT-2 recorded only the monitoring results, but did not record the times that the monitoring was conducted. The preprinted forms had a column where this information could be recorded. (NUREG-0654, I.8.)

Recommendation: The FMTs should consistently record the times at which readings are taken on the preprinted forms.

Schedule of Corrective Actions: Additional training will be provided to the FMTs to ensure that all monitoring procedures are followed and all forms are completed.

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

2.2.4 **SCHOOL SYSTEM (Clare Byrd Baker Elementary School)**

- a. **MET:** Objective 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 5 and 14

Issue No.: 62-99-5/14-A-25

Description: One of the two school bus drivers for Clara Byrd Baker Elementary School reported to the staging area to receive dosimetry, KI, and dosimetry forms. The bus driver who did have dosimetry was unfamiliar with the TLD; he stated that it was an identification tag. (NUREG-0654, H.10. and K.3.a.)

Recommendation: School bus drivers need to receive additional training regarding the importance and function of dosimetry, KI, and the dosimetry forms so they will remember to obtain these items before deployment and understand their use.

Schedule of Corrective Actions: Training will be provided to school bus drivers to review the importance and functions of dosimetry, KI, and related forms as they pertain to emergency workers exposures protective measures.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 16

Issue No.: 62-95-16-A-23

Description: When the James City County EOC Deputy Director instructed the school liaison to notify the transportation center to evacuate the schools at the Alert stage (0945), representatives of the one school participating in the exercise misunderstood the message and failed to evacuate. They stated that the confusion resulted from the fact that the exercise date was the last day of school and dismissal was at mid-day. No bus was dispatched to the school for evacuation, so none of the actions for this objective were demonstrated. (NUREG-0654, J.10.d. and J.10.g.)

Corrective Action Demonstrated: Two school buses were dispatched to the Clara Byrd Baker Elementary School to demonstrate evacuating the students, teachers, and staff to the host school (D. J. Montague Elementary School).

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

2.3 CITY OF NEWPORT NEWS

2.3.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 4, 5, and 14

- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 3, 10, 12, 13, and 15

Issue No.: 62-99-03-A-26

Description: Some EOC staff (Emergency Public Information Emergency Support Function [ESF], School Superintendent, Transportation Supervisor, Public Work/Engineering ESF) did not provide for the retention of message logs for incoming and outgoing messages and did not document the completion of emergency response-related activities for inclusion in the Master Emergency Response Log, as required by the *City of Newport News Emergency Operations Plan, Basic Plan*, page 14, Section I.A.4. (NUREG-0654, A.2.a.)

Recommendation: Additional training should be provided to EOC staff in maintaining message logs and documenting emergency response-related activities.

Schedule of Corrective Actions: Additional procedures will be implemented to ensure that message logs are updated and all emergency activities are well documented. In addition, additional training will be provided to EOC staff to clarify these procedures.

Issue No.: 62-99-03-A-27

Description: Several important messages received at the Newport News EOC were not processed in a timely manner; as a result, several required actions and responses were overlooked. The notification of Site Area Emergency (SAE) was not relayed to the Emergency Management Coordinator (EMC) nor posted on the status board until approximately 30 minutes after it was received on the Surry Insta-phone. Also, notification of the PAD to evacuate zones 4; 5; 6; 8; 9; 14; 16; 17; 18 A, B, C, and D; 19 A and B; 20 B; and 22 A and B and to shelter in place zones 1, 2, 3, 7, 10, 11, 12, 13, 15, 20 A, 21, 23, and 24 – received via the Surry Insta-phone at approximately 1310 – was not reported to the EMC until approximately 1333, when he inquired about the status of the PAD. Although a PAD form is available at the Newport News EOC to verify that notification of the PAD has been received, the Insta-phone message completed by personnel in the communications cell at approximately 1310 was not included in the logs. (NUREG-0654, A.1.d. and A.2.a.)

Recommendation: Communications and administrative staff at the Newport News EOC should be trained to follow the message management procedures detailed in the SOPs at this facility.

Schedule of Corrective Actions: EOC personnel will receive training on message management procedures and new procedures and training will be provided so that all staff in the EOC know of unfolding events as they occur.

Issue No.: 62-99-03-A-28

Description: Reporting of the Newport News FMT survey readings to the FTC at the LEOF/BRH was inadequate; the location of the FMTs and the exposure rate units were incorrectly reported. At 1255, the City of Newport News EOC staff reported survey readings at location "D-4" to the FTC at the LEOF. According to the map at the LEOF, monitoring point D-4 is located in the river. Actually the FMT was at the cloverleaf between I-64 and State Route 143 near Fort Eustis, approximately 3.5 miles southeast of D-4 used by the State. The FTC called the Newport News Radiological Officer (RO) to verify the location and magnitude of the readings (they were reported as mR/h and should have been in μ R/h). (NUREG-0654, I.7. and I.8.)

Recommendation: EOC staff should follow the procedures outlined in the Radiological Officers Procedure, in Appendix 6 of the RERP. The designated monitoring points on the FMT's map should agree with those map points used at the LEOF. Also, the RO should ensure that the correct radiation measurement units are provided to the LEOF.

Schedule of Corrective Actions: Additional training will be provided to EOC staff pertaining to Radiological Officers Procedures and designated monitoring points on maps will be reviewed for consistency and accuracy.

Issue No.: 62-99-10-A-29

Description: Notification to hearing-impaired individuals was not demonstrated or simulated, as required by the extent-of-play agreement. (NUREG-0654; E.6. and N.1.a.)

Recommendation: The City of Newport News EOC staff should follow the extent-of-play agreement.

Schedule of Corrective Actions: During the next exercise, notification to hearing-impaired individuals will be demonstrated.

Issue No.: 62-99-12-A-30

Description: The City of Newport News EOC staff failed to retract the 1345 news release (not numbered or logged) advising the general public to evacuate Zone 16 after the EMC cancelled the evacuation at 1340. (NUREG-0654; E.7.)

Recommendation: A management system should be developed to ensure that timely and accurate information is provided to the public.

Schedule of Corrective Actions: A systematic release of the current public information function will be conducted to ensure that an accurate information system is in place to provide timely and precise information to the public.

Issue No.: 62-99-12-A-31

Description: The media briefing conducted at 1425 and the three-city news releases did not address transportation-dependent individuals or special populations within Zone 16. (NUREG-0654; E.7.)

Recommendation: The PIO in the City of Newport News Emergency Information Center (EIC) should provide information for transportation-dependent individuals and special populations.

Schedule of Corrective Actions: PIO procedures will be revised to address the needs of special populations and transportation-dependent individuals in news releases and media briefings.

Issue No.: 62-99-13-A-32

Description: The PIO in the EIC does not have a system to identify rumors. The EIC was staffed by seven operators, one supervisor, and one support person. Questions from the public are addressed by EIC operators and forwarded to the PIO for review. In reviewing the messages, the PIO noticed several concerns (rumors) about a traffic accident. This trend was reported to the police, who responded that the traffic problem was being handled. The trend was not addressed in any subsequent news releases. (NUREG-0654; E.7. and G.4.c.)

Recommendation: The EIC staff should develop a procedure to document and characterize all incoming telephone calls and provide the PIO with a summary of activities. In addition, trends should be addressed in news releases to alleviate public concern.

Schedule of Corrective Actions: EIC staff will revise their procedures to identify and document trends in incoming telephone calls by the public and address all trends in news releases to assuage anxiety from the citizens.

Issue No.: 62-99-15-A-33

Description: The Public Health ESF was not able to identify the hearing-impaired population within Zone 16 in order to notify them of the evacuation or cancellation of the evacuation order. The ESF was provided with two detailed listings (name, address, telephone number, and special need) of over 1,000 special-needs residents in Newport News. One listing was by fire area districts and the other by police area districts. However, police and fire districts use different geographic configurations. To compound the problem, Zone 16 does not match either the fire nor the police districts. (NUREG-0654, J.10.d.)

Recommendation: A comprehensive listing of the special-needs population within the geographic boundaries of Zone 16 should be developed and provided to the Public Health ESF.

Schedule of Corrective Actions: A detailed list of all special-needs populations will be provided to the Public Health ESF.

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

2.3.2 FIELD MONITORING TEAM

- a. **MET:** Objectives 4, 5, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 6

Issue No.: 62-99-06-A-34

Description: The G-M side-window probe fell off the high-voltage cable when the probe was extended outside the FMT's vehicle. The probe was recovered and reinstalled but was not checked for operability with the attached check source before resuming use. (NUREG-0654, I.8.)

Recommendation: Additional training should be provided to the FMTs on

the use and care of instruments, including the instrument probes, and the importance of performing an operability check when the instrument is dropped.

Schedule of Corrective Actions: Comprehensive training will be provided to the FMTs on use and care of instruments, including procedures for performing an operability check if any instrument is dropped.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 6

Issue No.: 62-97-06-A-12

Description: An equipment inventory list was not available at Fire Station #6 from where the Newport News FMT was dispatched. Therefore, the team members were not sure if items were missing from their radiological monitoring kit. (NUREG-0654, H.10.)

Corrective Action Demonstrated: An inventory list of equipment and supplies was available at Fire Station #6; this list aided the FMT in determining that no equipment or supplies were missing.

Issue No.: 62-97-06-A-13

Description: A GE Emergency Classification Level (ECL) was received by the Battalion Chief at 1145, but the Newport News FMT was not dispatched to the field until 1355. Thus, the team was only able to conduct two ambient measurements, not the six required by the extent-of-play agreement. (NUREG-0654, I.11. and J.10.a.)

Corrective Action Demonstrated: The FMT Supervisor was notified at 1229 that a GE had been declared, and the FMT was dispatched within three minutes to its pre-determined monitoring points.

Issue No.: 62-97-06-A-14

Description: Readings by the Newport News FMT at monitoring site F-1 were taken with the instrument set on the wrong range, internal detector reading in Roentgens (R) per hour, which meant results were reported in 0.00 R/h. However, the reading should have been in microRoentgens per hour ($\mu\text{R/h}$), about 15-30 $\mu\text{R/h}$. (NUREG-0654, I.8.)

Corrective Action Demonstrated: The FMT arrived at D-4 at 1235 and made the required measurements with the instrument switch set to "external probe" for measuring in the microRoentgen-per-hour range.

Issue No.: 62-97-06-A-15

Description: The instrument probes used by the Newport News FMT were not covered with thin plastic to minimize possible contamination. (NUREG-0654, I.7., I.8., and I.11.)

Corrective Action Demonstrated: The instrument probe was covered by thin plastic to minimize possible contamination.

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

2.3.3 SCHOOL SYSTEM (Richneck Elementary School)

a. **MET:** Objective 14

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 5 and 16

Issue No.: 62-99-05-A-35

Description: The DRD (serial # 4065171) issued to the Newport News bus driver at Newport News Fire Station #6 was not properly zeroed; it was set to less than zero. When the bus driver for Richneck Elementary brought this to the attention of the RO, the situation was not corrected. (NUREG-0654, K.3.a.)

Recommendation: Personnel at the dosimetry distribution staging area should ensure that all DRDs are properly zeroed. Bus drivers and TCP/ACP personnel should receive training in radiological exposure control procedures before being deployed.

Schedule of Corrective Actions: All bus drivers and TCP/ACP personnel will receive training in radiological exposure control procedures and all personnel distributing dosimetry will check to make sure the instruments are zeroed prior to relinquishing them to emergency workers.

Issue No.: 62-99-16-A-36

Description: The map provided to the Newport News bus driver for evacuation of school children from Richneck Elementary to Magruder Elementary was not legible. (NUREG-0654, J.10.d. and J.10.g.)

Schedule of Corrective Actions: Bus drivers will be provided with legible maps and written directions in the next exercise.

Issue No.: 62-99-16-A-37

Description: The roster of available bus drivers (including their addresses and the bus inventory) were not provided by the bus driver at Richneck Elementary School, as required by the extent-of-play agreement. (NUREG-0654, N.1.a.)

Recommendation: The extent-of-play agreement should be followed at the next biennial exercise.

Schedule of Corrective Actions: A list of bus drivers and bus inventory will be provided at the next biennial exercise as required by the extent of play.

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

2.4 SURRY COUNTY

2.4.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 4, 5, 10, 12, 13, 14, and 15
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 3

Issue No.: 62-99-03-A-38

Description: The Surry County FMTs were deployed late in the exercise. The teams arrived at the EOC after the Alert ECL, received their equipment and briefing, and were placed on standby for dispatch. Although they were available, the teams were not deployed to a

monitoring location until 1314, well after the GE declaration (1219). The Surry County RERP and SOPs (Emergency Services Coordinator Procedure, Appendix 1, III.K; Radiological Officers Procedure, Appendix 6, III.D; Field Monitoring Team Procedure, Appendix 7, III.B) require FMTs to be dispatched following an escalation to SAE (which occurred at 1143 hours). (NUREG-0654, A.2.a.)

Recommendation: The Surry County RERP and SOPs should be followed when deploying FMTs.

Schedule of Corrective Actions: The Surry County RERP procedures for deploying FMTs will be followed in future exercises.

Issue No.: 62-99-03-A-39

Description: Reporting of the local FMT survey readings to the FTC at the LEOF/BRH was inadequate. The location associated with the Surry County FMT survey results was not reported; the survey readings were reported by the Surry County FMT in mR/h and should have been reported in μ R/h. (NUREG-0654, I.7. and I.8.)

Recommendation: Surry County EOC staff should follow the Radiological Officer's Procedure, Appendix 6 in the Surry County RERP.

Schedule of Corrective Actions: Additional training will be provided to EOC staff on following the Radiological Officer's Procedures.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES – RESOLVED:** Objectives 3, 4, 12, and 13

Issue No.: 62-97-03-A-17

Description: The Emergency Services Coordinator (ESC) did not ensure that all senior officials used and followed their respective SOPs. Also the ESC did not establish a record of events and response activities, retaining incoming and outgoing messages and transmissions, which resulted in the following:

1. The PIO, RO, Social Services Officer, and Public Schools Officer did not have and or use the Surry County plan or SOPs.
2. The TCP Officer was stationed at the TCP for more than three hours without being activated, even though the officer contacted the EOC dispatcher on several occasions to indicate that he was awaiting orders

to activate the TCP.

3. The FMT was activated well into the SAE; however, the plan called for the team to be activated at the Alert.
4. The initial Alert ECL message from SPS, broadcast over the Insta-phone, was misinterpreted as a Notification of Unusual Event (NOUE), alert by the dispatcher and the ESC; consequently, Surry County did not begin activation for another hour.
5. The PIO did not coordinate Surry County's PIO activities with other jurisdictions, i.e., news releases with adjacent counties and the State EOC. (NUREG-0654, A.1.d., A.2.a., and A.2.b.)

Corrective Action Demonstrated: The Coordinator established procedures for the retention of message logs for incoming and outgoing messages and radio/telephone transmissions. Frequent briefings were held to ensure that EOC staff were informed of the status of events, and instructions were repeated to staff on adherence to the plan and to SOPs for each position (copies of which were available and referenced).

Issue No.: 62-97-04-A-18

Description: The radio dispatcher did not use "This is a drill" in phone conversations with SPS about an injured worker. Nor was "This is a drill" used to dispatch the rescue squad, check on the rescue squad's estimated time of arrival at the plant, or call firefighters to the station. Scanners can pick up radio transmissions. This transmission could have caused public fear and panic. The dispatcher did not consistently use "This is a drill" during the telephone calldown of EOC officials. (NUREG-0654, F.1., F.2., and N.1.a.)

Corrective Action Demonstrated: The phrase "This is a drill" was consistently used throughout the exercise by EOC staff during all communication transmissions, including telephone calls, the telephone calldown of EOC staff, and radio transmissions.

Issue No.: 62-97-12-A-19

Description: The Surry County PIO was inexperienced in his duties, resulting in the following:

1. The PIO did not seek necessary information. He did not contact the State to ask about EAS messages. Even after the State called to say they were trying to fax the County, another hour passed before one EAS message arrived. The PIO did not call the State to ask why he had

received EAS #2, but not EAS #1.

2. The PIO did not provide the media (simulated) attending the briefing (simulated) with copies of news releases, copies of EAS messages, or media kits.
3. At 1035, the ESC sent a written message to the PIO directing him to prepare and release a press release concerning the protective action of sheltering in place zones 5, 6, 8, and 9. Instead, the PIO released information concerning an agriculture advisory.
4. The PIO did not coordinate news releases with the State, as required by the Surry County plan, page 30.
5. The PIO did not establish a briefing schedule for the media.
6. The PIO lacked sufficient information about his plan. He did not know which of the affected zones were in his County. He did not look up the geographic boundaries of the zones in his plan, nor did he tell the rumor control staff that the boundaries could be found in the plan. (NUREG-0654, G.3.a., G.4.a., and G.4.b.)

Corrective Action Demonstrated: The PIO demonstrated exceptional knowledge of the RERP and of the duties and responsibilities of the County Public Information Operating Procedure. Through close coordination, Virginia Department of Emergency Services (VDES) and SPS news releases were faxed to the PIO, who also discussed Surry news releases with the State PIO. The release of specific Surry County information to the public was discussed at length and communicated to the media in the formal media briefing. Copies of all available information and a future briefing schedule were also provided to the media.

Issue No.: 62-97-13-A-20

Description: Rumor control did not receive the number of calls specified in the extent of play. The extent of play called for six calls per hour during the emergency phase. The emergency phase was from 1014-1345. A total of 19 calls should have been received, but only 13 were received. (NUREG-0654, G.4.b., and G.4.c.)

Corrective Action Demonstrated: During the SAE and GE phases of the exercise, rumor calls averaged 6 per hour.

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

2.4.2 TRAFFIC AND ACCESS CONTROL

- a. MET: Objectives 4, 5, 14, and 17
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES – RESOLVED: None
- f. PRIOR ISSUES – UNRESOLVED: None

2.4.3 FIELD MONITORING TEAM

- a. MET: Objectives 4, 5, and 14
- b. DEFICIENCY: None
- c. AREAS REQUIRING CORRECTIVE ACTION: Objective 6

Issue No.: 62-99-06-A-40

Description: The Surry County FMT was issued a Ludlum 2240 survey instrument with a pancake probe instead of a side-window probe for taking measurements in the field. Consequently, the window-open and window-closed readings could not be made at distances of 3 feet and 3 inches above the ground. (NUREG-0654, I.8.)

Recommendation: The Surry County RO should ensure that the correct equipment is available for use by the FMT. The equipment checklist, Appendix 7, Section II.C.1., should be changed to clearly state that the Ludlum instrument will have the appropriate probe for field measurements.

Schedule of Corrective Actions: The equipment checklist in Appendix 7 will be changed to state that the Ludlum instrument will have the appropriate probe for the field measurements and the Radiological Officer will ensure that it is available for the FMTs.

- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES – RESOLVED: Objective 6

Issue No.: 62-97-06-A-21

Description: The Surry County FMT did not perform an operation check (radioactive source and battery) and a background radiation check before entering the field and was generally unfamiliar with the Ludlum Model 2240 instrument. The team did not recognize the Greek symbol mu on the digital display and therefore did not know that it represented microRoentgens per hour. They misinterpreted the expected reading from a source check as the maximum range of the instrument. (NUREG-0654, H.10. and N.1.a.)

Corrective Action Demonstrated: The team correctly performed operation checks and was very well versed on the use of the equipment. They knew the difference between milliRoentgens and microRoentgens. They correctly interpreted the instrument reading when performing a source check.

Issue No.: 62-97-06-A-22

Description: The Surry County FMT reported readings in microRoentgens per hour to the RO as in milliRoentgens per hour, even though they were informed the readings were in microRoentgens per hour. (NUREG-0654, I.8.)

Corrective Action Demonstrated: The measurements were taken and correctly read and recorded in units of microRoentgens per hour. The data were correctly reported to the RO at the Surry County EOC.

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

2.4.4 **EVACUATION ASSEMBLY CENTER (L.P. Jackson Middle School)**

a. **MET:** Objective 19

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 5, 18, and 22

Issue No.: 62-99-05-A-41

Description: The RO at the Surry County EAC at L.P. Jackson Middle School did not have a dosimeter charger. He indicated that he had zeroed the DRDs earlier in the day at his office in the high school; however, the DRDs read between 1 to 2 R. (NUREG-0654, K.3.a.)

Recommendation: The RO at the Surry County EAC should receive further training on radiological exposure control and ensure that the DRDs are

properly zeroed when distributed.

Schedule of Corrective Actions: The RO will receive additional training on radiological exposure control procedures.

Issue No.: 62-99-18/22-A-42

Description: The RO at the Surry County EAC instructed the monitoring staff that any reading above background on the survey instrument indicates that the vehicle or person is considered to be contaminated, which is not in accordance with Appendix 8 of the Surry County plan (page 8-8). Also, the RO did not know how to perform operational checks on the Ludlum 2240 survey instruments and did not distribute gloves and shoe covers to the monitors and decontamination workers, as required by the plan (page 8-8 in Appendix 8). (NUREG-0654, J.10.h. and J.12.)

Recommendation: The RO should receive further training on radiological monitoring procedures and use of the survey instrument.

Schedule of Corrective Actions: Comprehensive training of radiological monitoring procedures and use of survey instruments will be conducted with ROs.

Issue: 62-99-18/22-A-43

Description: The male and female locker rooms at the Surry County EAC were not equipped with decontamination supplies. No soap, brushes, or containers were provided for contaminated clothing, and no coveralls were available to replace the clothing that was simulated to be in the contaminated clothing container. (NUREG-0654; J.12.)

Recommendations: Decontamination supplies and replacement clothing should be available in the EAC.

Schedule of Corrective Actions: During the next exercise, decontamination supplies will be available at the EAC.

Issue: 62-99-18/22-A-44

Description: The emergency worker in the men's decontamination area at the Surry County EAC did not know what reading above background would

indicate that a person had been decontaminated. Also, no decontamination worker was available in the women's locker room. (NUREG-0654, J.10.h. and J.12.)

Recommendation: Decontamination workers should receive further training on contamination levels. A trained female decontamination worker should be available in the women's decontamination area.

Schedule of Corrective Actions: Additional training will be provided to all decontamination workers on contamination levels and a female decontamination worker will be provided in the women's locker room during the next exercise.

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

2.4.5 PRIMARY ROUTE ALERTING

- a. **MET:** Objectives 4, 5, 10, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.5 CITY OF WILLIAMSBURG

2.5.1 EMERGENCY OPERATIONS CENTER

- a. **MET:** Objectives 1, 2, 4, 5, 10, 12, 13, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 3 and 15

Issue No.: 62-99-03-A-45

Description: The City of Williamsburg EOC staff never contacted the FTC in the LEOF/BRH concerning FMT survey readings, as required in City of Williamsburg RERP, Appendix 6, Section III.F. (NUREG-054, I.7., and I.8.)

Recommendation: EOC staff should follow the Radiological Officer's Procedure, Appendix 6 of the City of Williamsburg RERP.

Schedule of Corrective Actions: Training will be provided to the EOC staff on the importance of following the Radiological Officer's Procedure found in the RERP.

Issues No.: 62-99-15-A-46

Description: One nursing home and one retirement center located within the City of Williamsburg were not included on any agency's call list. (NUREG-0654, J.10.d.)

Recommendation: An agency should be designated to provide emergency notification information to these facilities, and the City of Williamsburg's RERP should be amended to include the names of these facilities and the agency responsible for notification.

Schedule of Corrective Actions: An agency will be designated to provide emergency notification to these facilities and the RERP will be revised to reflect the addition of these agencies and the agency responsible for notification.

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES - RESOLVED:** Objectives 12 and 13

Issue No.: 62-97-12-A-23

Description: Hard copies of news releases were not prepared and disseminated to the EOC staff or available for distribution at media briefings, as required in the plan (City of Williamsburg RERP, Appendix 2, II.D., II.I., and II.J.). This omission could negatively impact the content, accuracy, and timeliness of information communicated by EOC staff. (NUREG-0654, E.7. and G.4.b.)

Corrective Action Demonstrated: The PIO provided briefings at 1130, 1200, and 1330. During the briefings, he handed out hard copies of all developed news releases. News releases were prepared by the PIO, approved by the ESC, faxed to the JPIC, and retained in the EOC for staff to reference. In addition, if a news release provided information about a specific agency, the PIO verbally coordinated message contents with that agency representative. The EOC is located in a small room where all essential agency representatives sit around a table, making it easy to verbally coordinate messages and reducing the need for multiple hard copies for EOC staff to reference.

Issue No.: 62-97-13-A-24

Description: Six rumor calls per hour were required in the extent-of-play agreement, but an average of only 4.67 calls per hour was received. Less than six calls were received during any one-hour period. In addition, the recognition of the rumor call trend involving blockage of a major evacuation route was slow (it was not recognized until 45 minutes after the second call establishing the trend was received), and corrective action to inform the public was not taken, as required in the plan (City of Williamsburg RERP, Appendix 2, II.H.). (NUREG-0654, G.4.b., and G.4.c.)

Corrective Action Demonstrated: The City of Williamsburg Rumor Control staff, in accordance with the extent-of-play agreement, received at least six calls per hour for at least one hour during the emergency phase of the exercise. From 1212 to 1313, Rumor Control answered 14 calls. When a rumor concerning an accident on the Colonial Parkway was detected, the PIO was informed of this misinformation so that it could be addressed at a press briefing.

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

2.5.2 **TRAFFIC AND ACCESS CONTROL**

a. **MET:** Objectives 4, 5, and 14

b. **DEFICIENCY:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 17

Issue No.: 62-99-17-A-47

Description: The Williamsburg City EOC did not establish an ACP. The extent-of-play agreement required the demonstration of one TCP and one

ACP. The officers deployed at the TCP stated that they had not been briefed by the EOC on establishing an ACP and were not aware of the function of an ACP in a post-emergency situation. The officers also did not know the locations of the EACs. (NUREG-0654, J.10.j. and N.1.a.)

Recommendation: Prior to dispatch, all TCP personnel should be briefed on all of their assigned functions to ensure that the required demonstrations take place. The briefing should include the locations of the EACs.

Schedule of Corrective Actions: Procedures will be revised to ensure that TCP personnel are briefed on their assigned functions prior to dispatch.

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

2.5.3 **FIELD MONITORING TEAM**

- a. **MET:** Objectives 4, 5, 6, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.6 **YORK COUNTY**

2.6.1 **EMERGENCY OPERATIONS CENTER**

- a. **MET:** Objectives 1, 2, 4, 5, 10, 13, 14, and 15
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 3 and 12

Issue No.: 62-99-03-A-48

Description: The York County RERP (Appendix 6, page 6-4, item 5) requires that the RO report FMT survey readings to the FTC at the LEOF/BRH as they are received. The RO received the first survey readings at 1315. Neither these readings nor the subsequent FMT survey readings were reported to the LEOF/BRH until 1419. (NUREG-0654, I.7. and I.8.)

Recommendation: York County EOC staff should follow the Radiological Officer's Procedure, Appendix 6 in the RERP and ensure FMT data is promptly reported to the LEOF.

Schedule of Corrective Actions: Review of Radiological Officer's Procedures will be reviewed with EOC staff to ensure data is promptly reported.

Issue No.: 62-99-12-A-49

Description: Incomplete and conflicting information was provided in the three news releases issued by the PIO. For example, only the first of the three messages directs the public to monitor their EAS stations, and the station call letters are not identified. The early precautionary evacuation of school children and institutionalized youths discussed in the first news release is not mentioned in subsequent releases, and news release #99-2 states that "No precautionary actions are necessary on the part of the public at this time." This message could lead the public to believe that precautionary actions regarding the early evacuation of school children were no longer in effect. In addition, no instructions were provided for transients in the news releases or during the media briefing, and the York County RERP does not specifically address the need to provide such information. (NUREG-0654, E.7. and G.4.a.)

Recommendation: The York County RERP, Appendix 2 (Public Information Officer) should be revised to specifically require that news releases direct the public to monitor their EAS stations. The appropriate generic news release and EAS message templates should be revised to include reference to the applicable radio and television stations listed in Appendix 2, Attachment 1 (page 2-4). The RERP also should be revised to require that news releases contain appropriate instructions to transients, information for the public concerning what to take with them when evacuating, and instructions concerning specific actions to be taken by those who may be directed to shelter in place (e.g., closing windows and ducts that vent to the outside).

Schedule of Corrective Actions: The York County RERP, Appendix 2, will be revised to include generic news releases and EAS message templates which refer to applicable radio and television stations, appropriate instructions for transients, information directing people what to take with them when evacuating, and specific instructions concerns on specific actions to take if directed to shelter in place. In addition, instructions should be added requiring that all news releases direct people to monitor the EAS stations.

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

2.6.2 **TRAFFIC AND ACCESS CONTROL**

- a. **MET:** Objectives 4, 5, 14, and 17
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None.
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

2.6.3 **FIELD MONITORING TEAM**

- a. **MET:** Objectives 4, 5, and 14
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objective 6

Issue No.: 62-99-06-A-50

Description: The York County FMT took readings at four different locations, totaling four sets of readings. The team was then assigned a fifth location to monitor, but on the way to the location the team was informed that the exercise had been terminated and was

instructed to return to the EOC. The extent-of-play agreement called for the team to take a minimum of six total sets of readings. (NUREG-0654, N.1.a.)

Recommendation: The FMT should follow the extent-of-play agreement at the next biennial exercise.

Schedule of Corrective Actions: The extent-of-play agreement will be followed at the next biennial exercise to ensure that the correct number of readings is taken by the FMT.

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

2.6.4 **SCHOOL SYSTEM (Queens Lake Middle School)**

- a. **MET:** Objective 5, 14, and 16
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

3. **HOST JURISDICTIONS**

3.1 **CHARLES CITY COUNTY**

3.1.1 **EMERGENCY OPERATIONS CENTER**

- a. **MET:** Objectives 1, 2, 3, 4, 12, and 13
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None

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

3.2 **CITY OF HAMPTON**

3.2.1 **EMERGENCY OPERATIONS CENTER**

- a. **MET:** Objectives 1, 2, 3, 4, 12, and 13
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** None
- f. **PRIOR ISSUES – UNRESOLVED:** None

3.2.2 **EVACUATION ASSEMBLY CENTER (Hampton Coliseum)**

- a. **MET:** Objectives 5 and 19
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 18 and 22

Issue No.: 62-99-18/22-A-51

Description: The monitoring personnel at the Hampton City EAC used grocery store plastic shopping bags to cover instrument probes while monitoring vehicles, evacuees, and emergency personnel. Portions of these large bags were dragged over potentially contaminated areas, which could result in cross contamination and erroneous readings. (NUREG-0654, J.12.)

Recommendation: A smaller bag for covering the probe should be provided to the monitoring personnel.

Schedule of Corrective Actions: In future exercises, a smaller bag will be used to cover the probe for monitoring.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 18

Issue No.: SYX93-31R

Description: Several City of Hampton radiological monitors did not know correct monitoring distances, speeds, trigger levels, and other monitoring procedures. (Objective 18) (NUREG-0654, J.9. and J.12.)

Corrective Action Demonstrated: City of Hampton radiological monitors knew and used correct monitoring distances, speeds, trigger levels, and procedures during this exercise.

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

3.3 **NEW KENT COUNTY**

3.3.1 **EMERGENCY OPERATIONS CENTER**

- a. **MET:** Objectives 1, 2, 3, 4, 12, and 13
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** None
- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 2

Issue No.: 62-97-02-A-26

Description: There were two boards describing ECL information. One did not get updated at the SAE until the GE, and one was somewhat obstructed from view by the television set. There were also two general status boards. One contained a message from a previous activity and was not used during the drill. The other was updated on a timely basis. (NUREG-0654, H.3.)

Corrective Action Demonstrated: The facility now has one board that provides ECL information. This board and all of the other status boards were updated in a timely manner.

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

3.3.2 EVACUATION ASSEMBLY CENTER (New Kent County High School)

- a. **MET:** Objectives 5 and 19
- b. **DEFICIENCY:** None
- c. **AREAS REQUIRING CORRECTIVE ACTION:** Objectives 18 and 22

Issue No.: 62-99-18/22-A-52

Description: Monitoring of individuals at the New Kent County EAC (New Kent County High School) took about half the time specified in the New Kent County Plan (Appendix #7, EAC Procedure page 7-9). (NUREG-0654, J.12. and K.5.b.)

Recommendation: Additional training in proper monitoring techniques should be provided to all monitoring staff.

Schedule of Corrective Actions: Comprehensive training will be conducted to EAC personnel on monitoring techniques and procedures.

Issue No.: 62-99-18/22-A-53

Description: Two of the three hand-held instruments at the New Kent County EAC failed their field operational test and could not be used. (NUREG-0654, H.10.)

Recommendation: The survey instruments should be repaired or replaced.

Schedule of Corrective Actions: The survey instruments at New Kent County EAC will be replaced.

- d. **NOT DEMONSTRATED:** None
- e. **PRIOR ISSUES – RESOLVED:** Objective 18

Issue No.: SYX93-30R

Description: Only two monitors participated in the exercise, whereas the extent-of-play agreement required four. (Objective 18) (NUREG-0654, J.12.)

Corrective Action Demonstrated: New Kent County provided six trained monitors for the exercise.

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

3.4 CITY OF POQUOSON

3.4.1 EMERGENCY OPERATIONS CENTER

a. **MET:** Objectives 1, 2, 3, 4, 12, and 13

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ISSUES – RESOLVED:** None

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

APPENDICES

APPENDIX 1

ACRONYMS AND ABBREVIATIONS

A&N	Alert and Notification
ACP	Access Control Point
ANL	Argonne National Laboratory
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
ARES	Amateur Radio Emergency Services
BRH	(State) Bureau of Radiological Health
CFR	<i>Code of Federal Regulations</i>
DES	Department of Emergency Services
DRD	Direct-Reading Dosimeter
EAC	Evacuation Assembly Center
EAS	Emergency Alert System
ECL	Emergency Classification Level
EIC	Emergency Information Center
EMC	Emergency Management Coordinator
EOC	Emergency Operations Center
ESC	Emergency Services Coordinator
ESF	Emergency Support Function
EPZ	Emergency Planning Zone
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
FTC	Field Team Coordinator
GE	General Emergency
JPIC	Joint Public Information Center
KI	Potassium Iodide
KLT	K.L. Travis and Associates
LEOF	Local Emergency Operations Facility
LLD	Lower Limit Detectable
LOCA	Loss-of-Coolant Accident

MCVH	Medical College of Virginia Hospital
mR	MilliRoentgen(s)
mR/h	MilliRoentgen(s) per Hour
μR/h	MicroRoentgen(s) per Hour
NOUE	Notice of Unusual Event
NRC	U.S. Nuclear Regulatory Commission
NTHMC	Natural and Technological Hazards Management Consulting, Inc.
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1 (<i>Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants</i>), November 1980
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guidance
PAO	Public Affairs Officer
PAR	Protective Action Recommendation
PHS	Public Health Service, U.S. Department of Health and Human Services
PIO	Public Information Officer
R	Roentgen(s)
R/h	Roentgen(s) per hour
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Services
REA	Radiological Emergency Area
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RHP	Radiological Health Program
RO	Radiological Officer
SAE	Site Area Emergency
SCVRS	Surry County Volunteer Rescue Squad
SOP	standard operating procedure
SPS	Surry Power Station
TCP	Traffic Control Point
TLD	Thermoluminescent Dosimeter
VAR	Voice Activation Receiver
VCIN	Virginia Criminal Information Network
VCU	Virginia Commonwealth University
VDES	Virginia Department of Emergency Services

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the SPS exercise on August 3, 1999. Evaluator Team Leaders are indicated by the letters "TL" after their names. The organization each evaluator represents is indicated by the following abbreviations:

FEMA	Federal Emergency Management Agency
NRC	U.S. Nuclear Regulatory Commission
PHS	Public Health Service, U.S. Department of Health and Human Services
ANL	Argonne National Laboratory
KLT	K.L. Travis and Associates
NTHMC	Natural and Technological Hazards Management Consulting, Inc.

<u>POSITION</u>	<u>NAME</u>	<u>ORGANIZATION</u>
RAC Chairman	K. Koob	FEMA
Project Officer	R. Helo	FEMA

1. Plume Exercise – August 3, 1999

<u>EVALUATION SITE</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
COMMONWEALTH OF VIRGINIA		
State EOC	R. Converse	ANL (TL)
	A. Lookabaugh	ANL
Joint Public Information Center	J. Sutch	ANL
Local Emergency Operations Facility	R. Trojanowski	NRC
	M. Geer	KLT
State Field Monitoring Team 1	D. Blunt	ANL
State Field Monitoring Team 2	E. Fuente	ANL
State Mobile Laboratory	D. Newsom	ANL
Medical Services – Transportation (Surry County Volunteer Rescue Squad)	T. Carroll	ANL
Medical Services – Facility (Medical College of Virginia)	F. Bold	ANL
	B. Jones	PHS

EVALUATION SITE

EVALUATOR

ORGANIZATION

RISK JURISDICTIONS

Isle of Wight County EOC

Traffic and Access Control
Field Monitoring Team
Evacuation Assembly Center (Smithfield
High School)
Primary Route Alerting

A. Henryson
A. Teotia
J. Klimek
C. Herzenberg
T. McCance

FEMA (TL)
ANL
NTHMC
ANL
NTHMC

D. Cray

ANL

James City County EOC

Traffic and Access Control
Field Monitoring Team
James City County/Williamsburg
School System (Clare Byrd Baker
Elementary School)

R. Thomson
K. Flynn
T. Deaner
L. Poch
J. Jackson

ANL (TL)
ANL
NTHMC
ANL
ANL

City of Newport News EOC

Field Monitoring Team
School System (Richneck Elementary
School)

H. Skoczalek
T. Baldwin
H. Harrison
M. Simonin

FEMA (TL)
ANL
ANL
ANL

Surry County EOC

Traffic and Access Control
Field Monitoring Team
Evacuation Assembly Center (L.P.
Jackson Middle School)
Primary Route Alerting

J. Muzzarelli
R. Smith
J. Karvelas
B. Serrano
P. Kier

ANL (TL)
ANL
ANL
ANL
ANL

C. Hunckler

ANL

City of Williamsburg EOC

Traffic and Access Control
Field Monitoring Team

B. Rospenda
S. Bailey
K. Eddy
L. Slagle

ANL (TL)
ANL
NTHMC
ANL

York County EOC

Traffic and Access Control
Field Monitoring Team
School System (Queens Lake Middle
School)

J. Price
C. Bebrich
W. Waddell
G. Goforth
S. Nelson

FEMA (TL)
ANL
ANL
ANL
ANL

EVALUATION SITE

EVALUATOR

ORGANIZATION

HOST JURISDICTIONS

Charles City County EOC

R. Van
L. Malone

FEMA (TL)
FEMA

City of Hampton EOC
Evacuation Assembly Center (Hampton
Coliseum)

W. Lueders
G. Jacobson

ANL
ANL

New Kent County EOC
Evacuation Assembly Center (New Kent
County High School)

A. Hall
B. Knoerzer

ANL
ANL

City of Poquoson EOC

R. Kowieski

NTHMC

Extent of Play:

State: The state will pre-position personnel necessary to support performance of this exercise at the State Emergency Operations Center (EOC) and Local Emergency Operations Facility (LEOF). Only the activities associated with mobilization of the JPIC, state mobile laboratory, and state FMTs will be evaluated. For demonstration purposes, initiation of Mobile Lab mobilization will occur out of sequence prior to the start of the exercise via inject message. The Mobile Lab will be deployed from the Radiological Health Program facility at 1500 E. Main Street, Richmond, Virginia.

It should also be noted that the Virginia EOC will demonstrate the capability to maintain continuous 24-hour staffing through an actual shift change of the key positions. Refer to Objective 30 for additional detail.

Risk and Host Jurisdictions: Risk and host jurisdictions will notify and mobilize appropriate response agencies and key personnel assigned to EOCs, media centers, field workers, and Evacuation Assembly Centers (if activated) at the appropriate emergency classification level and as per procedures.

Outstanding Issues:

62-95-01-A-12 Isle of Wight County

OBJECTIVE 2: FACILITIES – EQUIPMENT, DISPLAYS, AND WORK ENVIRONMENT

Demonstrate the adequacy of facilities, equipment, displays, and other materials to support emergency operations.

Objective Selected: Yes

Offsite Response Organizations:

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Host Jurisdictions:

Charles City County
City of Hampton
New Kent County
City of Poquoson

Extent of Play:

State (EOC, JPIC, mobile lab, etc.) - will participate but not be evaluated against this objective.

Risk and Host Jurisdiction: EOCs will operate essential equipment and maintain appropriate maps and other displays sufficient to support emergency operations.

- Adequate space
- Furnishings, desks, and chairs
- Lighting
- Rest rooms
- Ventilation
- Telephones
- Copier
- Fax Machine(s)
- Computer
- Backup power (demonstrated only if included in plans and procedures.)
- Appropriate maps:
 - Plume pathway EPZ
 - Evacuation routes (shown on EPZ map)
 - Locations of evacuation assembly centers
 - Radiological monitoring points
 - Traffic and access control points (*page from the procedures may be used as a display*)
- Other displays:
 - Population by protective action zone (*page from the procedures may be used as a display*)
 - ECL status board
 - Location of special facilities (e.g., schools)

Outstanding Issues:

62-97-02-A-26 New Kent County

OBJECTIVE 3: DIRECTION AND CONTROL

Demonstrate the ability to direct and control emergency operations.

Objective Selected: Yes

Offsite Response Organizations:

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Host Jurisdictions:

Charles City County
City of Hampton
New Kent County
City of Poquoson

Extent of Play:

State (EOC, JPIC, mobile lab, etc.) - will participate but not be evaluated against this objective.

Risk and Host Jurisdictions: This objective will be demonstrated at all risk and host jurisdiction EOCs. Demonstration will be in accordance with plans and procedures.

Outstanding Issues:

62-97-03-A-17	Surry	41-98-03-A-01	State EOC
41-98-03-A-02	State EOC		

OBJECTIVE 4: COMMUNICATIONS

Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC
 Local Emergency Operations Facility
 State Mobile Lab and Field Monitoring Teams

Risk Jurisdictions:

James City County
 Isle of Wight County
 City of Newport News
 Surry County
 City of Williamsburg
 York County

Host Jurisdictions:

Charles City County
 City of Hampton
 New Kent County
 City of Poquoson

Extent of Play:

State, Risk, and Host Jurisdictions: This objective will be demonstrated fully in all participating locations, in accordance with plans and procedures. All facility and field workers will have access to at least one communications system that is independent of commercial landline telephone. The use of primary communication pathways will be demonstrated during this exercise. A backup communication pathway will be demonstrated only if the primary communication pathway fails.

Outstanding Issues:

62-97-04-A-11

James City County

62-97-04-A-18

Surry

OBJECTIVE 5: EMERGENCY WORKER EXPOSURE CONTROL

Demonstrate the capability to continuously monitor and control radiation exposure to emergency workers.

Objective Selected: Yes

Offsite Response Organizations:

State: Local Emergency Operations Facility
State Mobile Lab and Field Monitoring Teams
Medical College of Virginia

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Extent of Play:

State: Virginia Department of Emergency Services (VDES) and Radiological Health Program (RHP) staff working in the LEOF will rely on the facility's area monitor system and will not perform 30-minute dosimeter readings. If the area monitoring system fails or the facility dose rates are shown to increase, dosimetry will be issued to facility personnel in accordance with Dominion Generation (formerly Virginia Power) procedures, and exposure will be monitored by Dominion Generation (formerly Virginia Power) facility monitoring personnel. State FMTs and mobile laboratory workers will demonstrate emergency worker exposure control, as per procedures.

Risk Jurisdictions: Appropriate emergency workers in the risk jurisdictions will demonstrate emergency worker exposure control, as per procedures. Because of scenario events some EACs and TCPs/ACPs (traffic/access control points) may not be demonstrated. Due to the Surry and Williamsburg EOCs being located within the EPZ, the exposure of Surry and Williamsburg EOC workers will be monitored according to their procedures. Radiological Officers will be evaluated on their management (equipment and briefing) of field workers at the staging area location where field workers are equipped and briefed.

In offsite areas where gamma exposure will not reach levels detectable by a 0-20 R dosimeter, an inject message depicting a dosimeter and associated scale reading will be provided by the Evaluator to stimulate discussion or demonstration of actions. Evaluators will question players in order to determine their knowledge of exposure levels and associated procedures.

Outstanding Issues:

62-97-05-A-05	Isle of Wight	62-97-05-A-07	Isle of Wight
41-98-05-A-03	State EOC	41-98-05-A-36	MCV
41-98-05-A-37	MCV		

OBJECTIVE 6: FIELD RADIOLOGICAL MONITORING – AMBIENT RADIATION MONITORING

Demonstrate the appropriate use of equipment and procedure for determining field radiation measurements.

Objective Selected: Yes

Offsite Response Organizations:

State: State Mobile Lab
State Field Monitoring Teams

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Extent of Play:

State: Two State FMTs, consisting of a minimum of two individuals per team, will be deployed from the State staging area. Each team will take measurements at a minimum of two locations, and will operate according to procedures. A minimum of six total sets of readings will be taken per team (for example, each team may visit two locations and take three sets of readings per location, or another combination may be used). The FMTs will demonstrate the capability to determine the location of the plume. One FMT will be instructed to traverse the plume in order to identify the plume edge location and to determine peak readings at the plume centerline. Each team will communicate results, as necessary, to the RHP representative at the LEOF. It should be noted that the overall monitoring effort is coordinated by RHP from this facility. Evaluators will provide data to the FMTs.

Risk Jurisdictions: Each risk jurisdiction will deploy one field monitoring team (at least two individuals per team) to a minimum of two monitoring points located within their jurisdiction. A minimum of six total sets of readings will be taken per team (for example, each team may visit two locations and take three sets of readings per location, or another combination may be used). Each set of readings will consist of open and closed readings at 3 inches and 3 feet. The monitoring results will be reported to their EOC, which will then forward the information to the RHP staff at the LEOF. Evaluators will provide data, as necessary, to the field teams.

Outstanding Issues:

62-97-06-A-21	Surry – FMT	62-97-06-A-22	Surry – FMT
62-97-06-A-12	Newport News – FMT	62-97-06-A-13	Newport News – FMT
62-97-06-A-14	Newport News – FMT	62-97-06-A-15	Newport News – FMT
41-96-06-A-03	State FMT2	41-98-06-A-12	State FMT2

OBJECTIVE 7: PLUME DOSE PROJECTIONS

Demonstrate the capability to develop dose projections and protective action recommendations regarding evacuation and sheltering.

Objective Selected: Yes

Offsite Response Organizations:

State: Local Emergency Operations Facility

Extent of Play:

State: The initial Protective Action Recommendation (PAR) is based on plant conditions. Scenario-driven doses may not exceed EPA Protective Action Guides (PAGs), as plant condition-based PARs will dictate the appropriate evacuation/sheltering recommendation.

Dose projections will be developed by the RHP staff at the LEOF and used to confirm or modify, as appropriate, the PAR in effect. The PAR will be forwarded from the LEOF to the Virginia EOC with any information necessary to support the recommendation.

Field monitoring data from local teams will be available to the RHP individual performing dose assessment for use in confirming earlier dose projections.

Outstanding Issues: None

**OBJECTIVE 8: FIELD RADIOLOGICAL MONITORING – AIRBORNE
RADIOIODINE AND PARTICULATE ACTIVITY MONITORING**

Demonstrate the appropriate use of equipment and procedures for the measurement of airborne radioiodine concentrations as low as 10^{-7} (0.0000001) microcuries per cubic centimeter in the presence of noble gases and obtain samples of particulate activity in the airborne plume.

Objective Selected: Yes

Offsite Response Organizations:

State: Mobile Lab
State Field Monitoring Teams

Extent of Play:

State: The revised RHP procedure has been provided to FEMA as proof of resolving ARCA 62-95-08-A-10.

Two State FMTs, consisting of a minimum of two individuals per team, will be deployed from the State staging area. Teams will be deployed as specified in Objective 6. At least one actual air sample will be taken at the first predetermined sampling location. Any additional air samples that are required by radiological conditions or by request from the Field Team Coordinator will be simulated. In place of silver zeolite cartridges, charcoal cartridges may be used for the exercise. Measurements will be taken in accordance with the Commonwealth of Virginia Department of Health, Radiological Health Program Emergency Response Plan.

OBJECTIVE 9: PLUME PROTECTIVE ACTION DECISION (PAD) MAKING

Demonstrate the capability to make timely and appropriate Protective Action Decisions (PAD).

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC
LEOF (RHP)

Extent of Play:

State: Decisions to evacuate and shelter any portion of the affected population will be demonstrated by the VDES State Coordinator or his/her representative in the State EOC. These decisions will be coordinated with risk jurisdictions. An appropriate health official

from the Department of Health will determine whether and when to authorize the administration of KI to emergency workers within the 10-mile EPZ.

In order that local jurisdictions take the appropriate actions to demonstrate those activities required by the extent of play, a pre-scripted PAD might be injected at the EOC or LEOF if the scenario and resulting PAR is insufficient to ensure adequate demonstration.

Outstanding Issues:

62-97-09-A-01	State EOC – RHP	41-98-09-A-04	State EOC
41-98-09-A-05	State EOC	41-98-09-A-06	State EOC
41-98-09-A-09	LEOF – RHP		

OBJECTIVE 10: ALERT AND NOTIFICATION (A&N)

Demonstrate the capability to promptly alert and notify the public within the 10-mile plume pathway emergency planning zone (EPZ) and disseminate instructional messages to the public on the basis of decisions by appropriate State or local officials.

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Extent of Play:

State and Risk jurisdictions: At a minimum, two A&N sequences will be demonstrated during the exercise. However, only the first activation of the system will be evaluated against the 15-minute criteria, unless evaluation of the second activation is deemed necessary. **Note that actual siren activation and EAS airing will be simulated.** This activation does not have to be linked to a protective action decision. The 15-minute clock begins when officials reach a decision to alert and notify the public and ends after the sirens have been sounded (simulated) and the EAS message has begun to be read to or at the radio station (simulated). Activation of the sirens covering all risk jurisdictions is accomplished simultaneously by the Surry 911 Dispatch Center, with backup provided by James City County Emergency Communications

Center and the Virginia EOC. However, a failure of the primary activation site will be injected (at the first sequence) to prompt demonstration by the backup site and associated system.

WRVA will be contacted to coordinate the simulated EAS transmission for the first sequence, unless evaluation of a second transmission is deemed necessary. Subsequent contacts with the radio station will be simulated.

Primary route alerting will be demonstrated in each affected risk jurisdiction only during the first A&N sequence. Isle of Wight and Surry Counties will each demonstrate one route, as follows:

Isle of Wight County – Route B (in Isle of Wight County)

Surry County – Route B (in Surry County)

Surry's route is located 0-5 miles from SPS and will be completed within 15 minutes of the decision to alert and notify the public. Isle of Wight's route is located 5-10 miles from SPS and will be completed within 45 minutes of the decision to alert and notify the public.

Notification to hearing-impaired individuals, if any, will be demonstrated (e.g., through explanation, as actual notification will be simulated) only during the first A&N sequence.

It should also be noted that Dominion Generation (formerly Virginia Power) is in the process of installing additional early warning system sirens in the 5-mile zone surrounding SPS.

Outstanding Issues: None

OBJECTIVE 11: PUBLIC INSTRUCTIONS AND EMERGENCY INFORMATION

Demonstrate the capability to coordinate the formulation and dissemination of accurate information and instructions to the public.

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC

Extent of Play:

State: An Emergency Alert System (EAS) message will be prepared and will be simulated to be disseminated over the EAS station (WRVA radio) after each simulated siren activation. The

message will follow EAS guidelines. Due to the constraints on EAS messages, an emergency news release will follow the EAS message providing the necessary additional details.

Outstanding Issues:

62-97-11-A-02	State EOC	62-97-11-A-03	State EOC
41-98-11-A-07	State EOC		

OBJECTIVE 12: EMERGENCY INFORMATION - MEDIA

Demonstrate the capability to coordinate the development and dissemination of clear, accurate, and timely information to the news media.

Objective Selected: Yes

Offsite Response Organizations:

State: Joint Public Information Center

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Host Jurisdictions:

Charles City County
City of Hampton
New Kent County
City of Poquoson

Extent of Play:

State: This objective will be demonstrated at the JPIC. News releases will be prepared by a VDES Public Affairs Officer (PAO). All news releases will be coordinated and exchanged with local jurisdictions. Dissemination of news releases may be accomplished by the use of facsimile and/or Group Wise. Media kits will be available at the JPIC.

Risk and Host Jurisdictions: Each jurisdiction will demonstrate this objective according to their procedures. One media briefing will be demonstrated in each jurisdiction. The media briefing may be staged for the benefit of the federal evaluator, if necessary. Briefings will be held in the jurisdiction's media center, the public affairs office, or other appropriate location, depending on the number of media being briefed.

Outstanding Issues:

62-97-12-A-04	Isle of Wight	62-97-12-A-19	Surry
62-97-12-A-23	Williamsburg	41-98-12-A-10	JPIC

OBJECTIVE 13: EMERGENCY INFORMATION – RUMOR CONTROL

Demonstrate the capability to establish and operate rumor control in a coordinated and timely manner.

Objective Selected: Yes

Offsite Response Organizations:

State: Joint Public Information Center

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Host Jurisdictions:

Charles City County
City of Hampton
New Kent County
City of Poquoson

Extent of Play:

State: VDES will establish a rumor control cell at the JPIC with a minimum of two individuals. Each person will respond to a minimum of six calls per hour for at least one hour during the emergency phase (Site Area Emergency through the General Emergency). Some calls will be designed so as to allow rumor control staff to demonstrate the capability to identify trends in rumors (e.g., frequently expressed false or misleading information). Rumor control telephone number(s) will be designated and published according to procedures. Since no actual exercise-related broadcasts will be made, the media monitoring equipment will be tested for operability and the staff will demonstrate their capability to monitor EAS stations.

Risk and Host Jurisdictions: Each jurisdiction will establish a rumor control telephone line at their EOC, media center, or other appropriate location. Each jurisdiction will respond to a minimum of six calls per hour for at least one hour during the emergency phase (Site Area Emergency through the General Emergency). Some calls will be designed so as to allow rumor control staff to demonstrate the capability to identify trends in rumors (e.g., frequently expressed false or misleading information). Rumor control telephone number(s) will be designated and published according to each jurisdiction's procedures. Since no actual exercise-related broadcasts will be made, the media monitoring equipment will be tested for operability and the staff will demonstrate their capability to monitor EAS stations.

Outstanding Issues:

62-97-13-A-20	Surry	62-95-13-A-14	Isle of Wight
62-97-13-A-24	Williamsburg	41-96-13-A-02	JPIC
41-98-13-A-11	JPIC.		

OBJECTIVE 14: IMPLEMENTATION OF PROTECTIVE ACTION – USE OF POTASSIUM IODIDE (KI) FOR EMERGENCY WORKERS, INSTITUTIONALIZED PERSONS AND THE GENERAL PUBLIC

Demonstrate the capability and resources to implement potassium iodide (KI) protective actions for emergency workers, institutionalized individuals and, if the State plan specifies, the general public.

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC
Local Emergency Operations Facility
State Field Monitoring Teams

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Extent of Play:

The Commonwealth of Virginia Radiological Emergency Response Plan does not provide for the administration of potassium iodide for the general public.

State: An appropriate health official from the Department of Health will determine whether and/or when to authorize the administration of KI to emergency workers.

Risk Jurisdictions: Each risk jurisdiction will have a sufficient quantity of KI on hand in the EOC or at some other storage location or be capable of demonstrating its availability through written documentation (inventory sheets or letter). This may be demonstrated out of sequence the day of the exercise. The KI intended for use will not exceed the expiration date. Emergency workers, as appropriate, will receive KI according to their procedures and will be briefed or given information on its use. Simulated KI can be used. KI might not be recommended for all jurisdictions, depending on RHP's recommendation.

Outstanding Issues:

41-98-14-A-13

State FMT2

OBJECTIVE 15: IMPLEMENTATION OF PROTECTIVE ACTIONS – SPECIAL POPULATIONS

Demonstrate the capability and resources necessary to implement appropriate protective actions for special populations.

Objective Selected: Yes

Offsite Response Organizations:

Risk Jurisdictions:

James City County
Isle of Wight County
City of Newport News
Surry County
City of Williamsburg
York County

Extent of Play:

Risk Jurisdictions: Each risk jurisdiction affected by the protective action will make available for viewing a list of any special needs individuals within their portion of the 10-mile EPZ. This will be coordinated through the local EOC and may be demonstrated out of sequence the day of the exercise. **It is possible that some of the jurisdictions do not have any special needs individuals within this area.** If resources are needed to assist these individuals for areas included in the PARs, the availability of these resources will be verified (e.g., through discussion and presentation of transportation methods or providers, available vehicles). Protective actions may not be demonstrated in all jurisdictions, depending on the PAR.

Outstanding Issues: None

OBJECTIVE 16: IMPLEMENTATION OF PROTECTIVE ACTIONS – SCHOOLS

Demonstrate the capability and resources necessary to implement protective actions for school children within the plume pathway emergency planning zone (EPZ).

Objective Selected: Yes

Offsite Response Organizations:

Risk Jurisdictions:

James City County/ City of Williamsburg - combined system (Clara Byrd Baker Elementary School)
Newport News (Woodside High School)
York County (Queen's Lake Middle School)

Extent of Play:

Risk Jurisdictions: James City County will have a school representative at or available to their EOC. When dictated by events and according to procedures, officials will determine what protective actions are prudent for schools located within the 10-mile EPZ. Officials will also be capable of demonstrating what protective action decision they would make for schools located outside of the 10-mile EPZ, yet reside within the 10-mile EPZ.

A FEMA representative will evaluate actions at one school in James City County/ Williamsburg. A FEMA evaluator will be present at the participating school to observe actions taken by the Principal, School Transportation Officer, Bus Dispatcher, and one Bus Driver. These individuals will be prepositioned at each school. Actions will be according to the school's emergency response plan.

The following issues will be evaluated during the exercise, or may be evaluated out of sequence:

1. The decision making process on what protective actions should be taken by schools.
2. Notification to the impacted schools of school protective action decision.
3. Ability to provide the Public Information Officers with information regarding school protective actions for inclusion in news releases to the public.
4. Ability of the selected schools to implement school protective action decision. Actual implementation will be simulated by describing to the evaluator the procedures which would be followed.
5. If the school protective action decision calls for evacuation, schools should be prepared to demonstrate the following:
 - The capability to contact bus drivers, ensure their prompt arrival at the schools, and the capability to mobilize sufficient transportation resources to evacuate students and staff. These actions will be demonstrated through the presentation of a bus driver roster with telephone numbers and addresses and through the presentation of a bus inventory.
 - The ability for buses to transport students to a host facility (Host School or Evacuation Assembly Center). One vehicle should drive from the evacuating school to the host facility to demonstrate knowledge of the route.
 - The ability to communicate with bus driver en route.
 - Coordination with the host facility via telephone.

6. Schools located outside of the 10-mile EPZ with students residing within the 10-mile EPZ should be prepared to discuss what actions would be taken with these students.

Outstanding Issues:

62-95-16-A-23 James City

OBJECTIVE 17: TRAFFIC AND ACCESS CONTROL

Demonstrate the organizational capabilities and resources necessary to control evacuation traffic flow and to control access to evacuated and sheltered areas.

Objective Selected: Yes

Offsite Response Organizations:

Risk Jurisdictions: Only risk jurisdictions required by the scenario.

Extent of Play:

Risk Jurisdictions: Each jurisdiction which is caused by the exercise scenario to activate traffic control points and access control points will activate one traffic control point (TCP) and one access control point (ACP) utilizing local law enforcement officers or Virginia State Police. The personnel used to activate the TCP can also be the ones to activate the ACP.

This objective will be evaluated by the route alerting evaluator, if applicable. This objective may be demonstrated out-of-sequence (during the day of the exercise) at a time determined by the evaluator and the TCP/ACP emergency worker. If this objective is not to be demonstrated out-of-sequence, TCP officers will be dispatched at the time called for in the jurisdiction's procedures. The officer will remain at the TCP for one hour or until visited by the evaluator, whichever comes first. After that point the officer will move to the ACP. Ideally, the evaluator will follow the officer to the TCP when deployed and then to the ACP.

The TCP/ACP officers will be knowledgeable of the following:

- Traffic Control
- Access Control
- Protective Action Decisions in effect
- Location of that jurisdiction's EAC
- Dosimetry and exposure limits (reporting and turn back levels)
- Procedure to follow for traffic impediments

Outstanding Issues:

62-97-17-A-06 Isle of Wight

**OBJECTIVE 18: RECEPTION CENTER – MONITORING, DECONTAMINATION,
AND REGISTRATION**

Demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring, decontamination, and registration of evacuees.

Objective Selected: Yes

Offsite Response Organizations:

Risk and Host Jurisdictions:

Hampton (Hampton Coliseum)
Isle of Wight (Smithfield High School)
New Kent (New Kent High School)
Surry (L. P. Jackson Middle School)

Extent of Play:

Risk and Host Jurisdictions: This objective may be evaluated out of sequence. Each activated EAC will be set up according to established plans and procedures. However, the EACs will only be staffed with representative monitoring and decontamination personnel to allow exercise demonstration (less than normally required by procedure). Each EAC will monitor and register a minimum of six persons consecutively. These six persons can be EAC workers acting as evacuees. The use of walk-through portal monitors will be demonstrated in all activated EACs. Evacuee decontamination procedures and the referral of individuals to a medical facility may be simulated through interview. The decontamination of one person will be initiated through Evaluator inject or labeling. During vehicle monitoring, air filters may be monitored without raising the vehicle hood. Vehicle decontamination may be simulated through interview. Simulated contaminated waste water need not be contained or stored.

Outstanding Issues:

62-97-18-A-08	Isle of Wight	62-97-18-A-09	Isle of Wight
62-97-18-A-10	Isle of Wight	62-97-18-A-25	York
SYX93-21R	Isle of Wight	SYX93-30R	New Kent
SYX93-31R	Hampton		

OBJECTIVE 19: CONGREGATE CARE

Demonstrate the adequacy of facilities, equipment, supplies, personnel, and procedures for congregate care of evacuees.

Objective Selected: Yes

Offsite Response Organizations:

Risk and Host Jurisdictions:

Hampton (Hampton Coliseum)
Isle of Wight (Smithfield High School)
New Kent (New Kent High School)
Surry (L. P. Jackson Middle School)

Extent of Play:

Risk and Host Jurisdictions: This objective may be evaluated out of sequence. For the demonstration of congregate care, bedding, cots, food, etc. normally associated with mass care need not be moved to the site. However, the source of these items will be explained to evaluators.

Outstanding Issues:

62-95-19-A-17 Isle of Wight 62-97-19-A-16 Newport News

OBJECTIVE 20: MEDICAL SERVICES – TRANSPORTATION

Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or radiologically exposed individuals.

Objective Selected: Yes

Offsite Response Organizations:

Risk Jurisdiction:

Surry County

Extent of Play:

Risk Jurisdiction: The Surry County Volunteer Rescue Squad (SCVRS) will respond to the SPS to pick up one contaminated, injured individual and transport that individual to the Medical College of Virginia (MCV), unless the SCVRS is involved in a concurrent actual event at the time exercise demonstration is scheduled to occur. Should this situation arise, a back-up off-site rescue squad may be used to respond and transport the patient.

Dominion Generation (formerly Virginia Power) procedures direct that a health physics technician accompany the patient to the hospital. This health physics technician will conduct all monitoring of the patient and will follow Dominion Generation (formerly Virginia Power) procedures. If Dominion Generation (formerly Virginia Power) does not provide a health

Offsite Response Organizations:

Risk and Host Jurisdictions:

Hampton (Hampton Coliseum)
Isle of Wight (Smithfield High School)
New Kent (New Kent High School)
Surry (L. P. Jackson Middle School)

Extent of Play:

Risk and Host Jurisdictions: This objective may be demonstrated out of sequence. Each activated EAC will demonstrate the monitoring and decontamination of one emergency worker and one vehicle. The decontamination will simulated through interview. However, appropriate equipment for decontamination will be available. Simulated contaminated wastewater need not be contained or stored.

Outstanding Issues:

62-95-22-A-24 Charles City 62-95-22-A-25 Charles City

OBJECTIVE 23: SUPPLEMENTARY ASSISTANCE (FEDERAL/OTHER)

Demonstrate the capability to identify the need for external assistance and to request such assistance from Federal or other support organizations.

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC

Extent of Play:

State: EOC will simulate notification to an appropriate external agency, in accordance with established plans and procedures, when it is determined such resources are needed to support the response effort.

Outstanding Issues:

41-98-23-A-08 State EOC

Outstanding Issues: None

OBJECTIVE 28: RELOCATION, RE-ENTRY, AND RETURN – DECISIONMAKING

Demonstrate the capability to develop decisions on relocation, re-entry, and return.

Objective Selected: No

Outstanding Issues: None

OBJECTIVE 29: RELOCATION, RE-ENTRY, AND RETURN – IMPLEMENTATION

Demonstrate the capability to implement relocation, re-entry, and return.

Objective Selected: No

Outstanding Issues: None

OBJECTIVE 30: CONTINUOUS 24-HOUR STAFFING

Demonstrate the capability to maintain staffing on a continuous, 24-hour basis through an actual shift change.

Objective Selected: Yes

Offsite Response Organizations:

State: State EOC

Extent of Play:

State: The Virginia EOC will demonstrate the capability to maintain continuous 24-hour staffing through an actual shift change of the key positions listed below. Since the exercise occurs during normal working hours within the time frame of a normal shift, the Virginia EOC will be prompted to conduct the shift change through an inject message. The key positions to be demonstrated are:

- Director Operations
- Operations Officer #1
- Operations Officer #2
- Radiological Health Program Officer
- Public Information Officer

Outstanding Issues: None

OBJECTIVE 31: OFFSITE SUPPORT FOR THE EVACUATION OF ONSITE PERSONNEL

Demonstrate the capability to provide offsite support for the evacuation of onsite personnel.

Objective Selected: No

Outstanding Issues: None

OBJECTIVE 32: UNANNOUNCED EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions in an unannounced exercise or drill.

Objective Selected: No

Outstanding Issues:

62-95-32-A-04

State

62-95-32-A-21

James City County

OBJECTIVE 33: OFF-HOURS EXERCISE OR DRILL

Demonstrate the capability to carry out emergency response functions during an off-hours exercise or drill.

Objective Selected: No

Outstanding Issues: None

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events – Exercise Scenario – that was used as the basis for invoking emergency response actions by OROs during the SPS exercise on August 3, 1999.

This exercise scenario was submitted by the Commonwealth of Virginia and approved by FEMA Region III by July 13, 1999.

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

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

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

SCENARIO SUMMARY:

A plume pathway exercise is scheduled to be conducted at the SPS on August 3, 1999. This exercise will involve participation by the utility as well as the Commonwealth of Virginia and ten local jurisdictions in the vicinity of the plant site.

The exercise begins at about 0900 with both units operating at 100% power and no equipment out of service. At 0905, a medical emergency occurs in the Unit 1 alleyway. The emergency is reported to the control room simulator and the First Aid Team responds. The victim's injuries are severe enough to require transport to an off-site medical facility for treatment and decontamination.

At 1001, a problem occurs in the Unit 1 #1 low pressure turbine, resulting in high turbine vibrations. A blade penetrates the turbine, which results in a turbine and reactor trip. The thrown blade penetrating the casing establishes the conditions for an **Alert** classification.

Following this event, a Reactor Coolant Pump develops high vibrations and at 1134 operators trip the pump. At this time, a loose part in the lower reactor vessel causes fuel clad damage, and reactor coolant system pressure increases. Then, at 1138, a small-break Loss of Coolant Accident

(LOCA) occurs. Containment pressure starts increasing and additional fuel clad damage occurs, resulting in a **Site Area Emergency** classification.

At 1210, the accident becomes a major-break LOCA, resulting in high containment pressure. When the pressure spike occurs in containment, piping cracks, allowing a radiological release into the auxiliary building. Subsequently, a radiological release to the environment occurs through the ventilation system, resulting in the declaration of a **General Emergency**.

The escalation through the applicable emergency classifications provides activities designed to exercise both on-site and off-site response organizations. Sufficient time is permitted to allow the response organizations to perform the required assessment and appropriate response actions.

At 1400 the exercise is terminated, except for any continuing or additional activities that must be performed to complete the evaluation.

APPENDIX 5

PLANNING ISSUES

This appendix contains the Planning Issues assessed during the August 3, 1999, exercise at SPS. Planning Issues are defined as issues observed or identified in an exercise that do not address participant or organizational performance, but rather inadequacies in the plan or procedures. **A plan issue should be corrected no later than the next annual plan review and update.**

Commonwealth of Virginia – Emergency Operations Center

Issue No.: 62-99-06-P-01

Description: The SOPs for the FMTs in the risk jurisdictions (Appendix 7, Paragraph III, section G) require the teams to “take survey readings every half hour during the Site Area Emergency” and to “begin taking readings every 15 minutes” during the GE (Paragraph IV section B). Paragraph III, section F, requires the FMT to “take open- and closed-window readings at the heights of 3 feet and 3 inches.” (NUREG-0654, I.7. and I.8.)

Recommendation: The SOP should be revised to instruct the FMTs to leave the instrument on at all times during the SAE and GE (with the audio switch turned on) to ensure that the teams are alerted when they enter the plume. The SOP should also be revised to state that the open- and closed- window readings at heights of 3 feet and 3 inches are to be taken primarily when the team enters the plume, or when requested. Normally, field measurements are taken at the 3- foot level only to determine whether radiation levels have increased.

Schedule of Corrective Actions: The SOP will be revised to instruct the FMTs to leave the instrument on at all times during the SAE and GE (with the audio switch turned on) to ensure that the teams are alerted when they enter the plume. The SOP will also be revised to state that the open- and closed- window readings at heights of 3 feet and 3 inches are to be taken primarily when the team enters the plume, or when requested.

Virginia Medical Services – Medical College of Virginia Hospital (Richmond)

Issue No.: 62-99-21-P-02

Description: One federal government hospital listed on page 44 in *the Radiation Emergency Plan, MCVH/VCU – VIRGINIA POWER* (dated June 29, 1999) that would assist State and local governments during a radiological emergency is closed and the others may be significantly downsized. (NUREG-0654, N.1.a.)

Recommendation: The status of all hospitals listed in the plan should be reviewed, and the plan should be revised accordingly.

Schedule of Corrective Actions: The plan will be revised to reflect the current status of hospitals listed to assist State and local governments in the event of a radiological emergency.

Isle of Wight County Emergency Operations Center

Issue No.: 62-99-14-P-03

Description: *The Isle of Wight County Radiological Emergency Response Plan and Standard Operating Procedures* (July 1999) does not identify the State Health Commissioner as the authority who orders emergency workers within the 10-mile EPZ to take KI. (NUREG-0654, J.10.e. and J.10.f.)

Recommendation: The plan should be revised to specify who authorizes emergency workers to take KI.

Schedule of Corrective Actions: The plan will be revised to specify that the State Health Commissioner is who authorizes emergency workers to take KI.

James City County Field Monitoring Team

Issue No.: 62-99-06-P-04

Description: The field monitoring locations for FMT-2, as listed in the James City County Field Team Monitoring Procedure (Appendix 7, Attachment 2), do not match the locations on the preprinted field monitoring data form. Location B7 is listed on the preprinted form, but not in the Field Team Monitoring Procedure. (NUREG-0654, I.8. and J.10.a.)

Recommendation: The procedure and the preprinted form should be reviewed and corrected so that the field monitoring locations match.

Schedule of Corrective Actions: The procedure and the preprinted form will be reviewed and revised in order that the field monitoring locations match.

Newport News City Field Monitoring Team

Issue No.: 62-99-06-P-05

Description: The City of Newport News used a system of pre-designated monitoring points that is different from the system used by the Commonwealth of Virginia. When results are compared (to avoid duplicate coverage in some areas and omission of other areas), the differences lead to potential conflict and confusion. (NUREG-0654, I.11. and J.10.a.)

Recommendation: A system should be developed to ensure that all designated monitoring locations for Newport News are consistent with those used by the Commonwealth.

FEMA Response: The evaluator's narrative revealed that monitoring point D-4 for Newport News is located at the I-64 overpass and Route 143; while the monitoring point designee used by the Commonwealth places the team about four miles east northeast of SPS, out in the James River. In order to eliminate any confusion in the future, all points need to be consistent with those used by the Commonwealth FMTs. Therefore, the planning issue will remain as stated.

Newport News City School System

Issue No.: 62-99-16-P-06

Description: The Richneck Elementary School RERP does not address the need for school medical records and pupils' medication to accompany the students to the host school during the evacuation process. There is also no mention in the plan of an annual letter to the parents that provides detailed descriptions of how to get to the host school or of a detailed Public Service Announcement that provides directions to the host school. Furthermore, the plan does not address the need for coordination between the school and host school regarding whom a child can be released to at the host school. (NUREG-0654, J.10.d. and J.10.g.)

Recommendation: The plans should be appropriately revised to include these details.

Schedule of Corrective Actions: The school plans will be revised to address the need for school medical records and pupil's medication to accompany the students to the host school during evacuation. However, the school plan is a set of procedures describing the evacuation process that supplement the Superintendent's Procedures in the RERP. Any attachments such as a detailed Public Service Announcement would be more appropriately placed in the RERP, not the school plans.

Surry County Evacuation Assembly Center

Issue No.: 62-99-18-P-07

Description: The Surry County EAC procedure states in four places that "Contamination is considered anything above 0.1 mR/h (100 mR/h)." There is a typographical error in this statement that results in 0.1 mR/h being equated with 100 mR/h. Actually, 0.1 mR/h is the same as 100 μ R/h. (NUREG-0654, J.12.)

Recommendation: The plan should be revised to correct this error.

Schedule of Corrective Actions: The plan will be revised to correct the error.

City of Williamsburg Field Monitoring Team

Issue No.: 62-99-05-P-08

Description: The provisions of Item 4, "Emergency Worker Exposure Control Handout" required by the *City of Williamsburg Radiological Emergency Response Plan*, Appendix 7, Section II.B. (issued to the FMT prior to its deployment) are covered by Item 8 (which should actually be numbered 7). (NUREG-0654, K.3.b.)

Recommendation: Item 4 in the *City of Williamsburg Radiological Emergency Response Plan*, Appendix 7, Section II.B. should be deleted and the subsequent items should be renumbered.

Schedule of Corrective Actions: The plan will be revised to correct the errors.

Charles City County Evacuation Assembly Center

Issue No.: 62-99-18/19-P-09

Description: The City of Hampton RERP does not contain a flow diagram for the monitoring and decontamination of vehicles and for the setup and flow for the monitoring and decontamination of evacuees inside the Coliseum. Space allocation for the various congregate care options (e.g., nursing station, care of children) should be shown on the floor diagram. (NUREG-0654, J.12.)

Recommendation: The plan should be revised and the diagram should be included in Annex 8, Appendix I of the plan.

Schedule of Corrective Actions: The plan will be revised and the diagram should be included in Annex 8, Appendix I of the plan.

New Kent County Evacuation Assembly Center

Issue No.: 62-99-18/22-P-10

Description: The path for decontaminated and clean females at the New Kent County EAC, New Kent County High School, required an exit from the shower area to the exterior of the high school and reentry into the gymnasium for registration into the congregate care area of the EAC. (NUREG-0654, J.12. and K.5.b.)

Recommendation: The facility setup should be reconfigured so that individuals do not have to exit the facility after being decontaminated.

Schedule of Corrective Actions: The facility setup should be reconfigured.

APPENDIX 6

ADDITIONAL PRIOR ISSUES

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

PRIOR ISSUES AT FUNCTIONAL ENTITIES NOT SCHEDULED TO BE DEMONSTRATED

Issue No.: 62-95-32-A-04 – State EOC

Description: There was considerable evidence, at the State EOC and James City County EOC, that the day and time of the exercise was known to the players. (NUREG-0654, N.1.b.)

Reason ARCA Unresolved: Objective 32 was not included in the extent-of-play agreement for the 1999 SPS plume exposure pathway exercise.

Recommendation: Objective 32 should be included in the extent-of-play agreement for the next scheduled biennial exercise at SPS.

Issue No.: 62-97-19-A-16 – Newport News EAC (Warwick High School)

Description: The form used to register evacuees at the Newport News EAC does not conform to the "Virginia Radiological Exposure Record" form, Appendix 6, page 6-9 of the "Radiological Emergency Response Plan," form REC-2. (NUREG-0654, J.12.)

Reason ARCA Unresolved: Objective 19 for Newport News was not included in the extent-of-play agreement for the 1999 SPS plume exposure pathway exercise.

Recommendation: Objective 19 for Newport News should be included in the extent-of-play agreement for the next scheduled biennial exercise at SPS.

Issue No.: 62-97-18-A-25 – York County EAC (Grafton Middle/High School)

Description: The York County EAC monitoring personnel did not use any method to identify individuals who were monitored and found to be clean in accordance with the plan, Appendix 8, pages 8-8 and 8-11. Monitored individuals were simply directed to proceed to the center's registration desk. (NUREG-0654, J.12.)

Reason ARCA Unresolved: Objective 18 for York County was not included in the extent-of-play agreement for the 1999 SPS plume exposure pathway exercise.

Recommendation: Objective 18 for York County should be included in the extent-of-play agreement for the next scheduled biennial exercise at SPS.

Issue No.: 62-95-22-A-24 – Charles City County EAC (Charles City County High School)

Description: No radioactive check source was available for a Ludlum Model 14C-2 survey instrument equipped with a Ludlum Model 44-38 GM probe. The James City County RERP (dated March 1995), Appendix 8, page 8-5 in Section C.2.c, page 8-7 in Section D.2.c, and page 8-9 in Section E.32, require that the radiation monitoring instrument have a check source to ensure that the meter responds appropriately to radiation. (NUREG-0654, H.10.)

Reason ARCA Unresolved: Objective 22 for Charles City County was not included in the extent-of-play agreement for the 1999 SPS plume exposure pathway exercise.

Recommendation: Objective 22 for Charles City County should be included in the extent-of-play agreement for the next scheduled biennial exercise at SPS.

Issue No.: 62-95-22-A-25 – Charles City County EAC (Charles City County High School)

Description: The emergency worker was not monitored prior to decontamination, and Form REC-2, "Evacuee Radiation Dose Record," was not annotated prior to and after decontamination, as required by the James City County RERP, Appendix 8, Section D-6. (NUREG-0654, H.10.)

Reason ARCA Unresolved: Objective 22 for Charles City County was not included in the extent-of-play agreement for the 1999 SPS plume exposure pathway exercise.

Recommendation: Objective 22 for Charles City County should be included in the extent-of-play agreement for the next scheduled biennial exercise at SPS.

Issue No.: 62-95-32-A-21 – James City County EOC

Description: Advanced notification of the designated exercise day within the seven-day window was not limited to those with a need to know. The local American Red Cross chapter delivered donuts to the EOC before the exercise began; two officials from the mutual aid jurisdiction of Caroline County also arrived before the exercise started; and a local newspaper reporter confirmed advance knowledge of the exercise. The EOC was also provided with a copy of the Administrative Instruction, which contained the exercise date and scenario. (NUREG-0654, N.1.b.)

Reason ARCA Unresolved: Objective 32 was not included in the extent-of-play agreement for the 1999 SPS plume exposure pathway exercise.

Recommendation: Objective 32 should be included in the extent-of-play agreement for the next scheduled biennial exercise at SPS.

PRIOR ISSUES FOR INGESTION EXPOSURE PATHWAY OBJECTIVES

Issue No.: SYX91-51R: – Chesapeake City EOC

Description: The EOC issued a news release informing residents that agricultural recommendations issued by the State could be obtained from the Agricultural Agent. The EMC had not ascertained what these recommendations were or ensured that the Agricultural Agent was aware of them. Coordination should be effected between the State and the Agricultural Agent before information is released. (Objective 3; NUREG-0654, A.1.d. and A.2.a.)

Reason ARCA Unresolved: The Chesapeake City EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-52R: – Chesapeake City EOC

Description: Parts of Chesapeake obtain water from Norfolk and Portsmouth. While water in Norfolk and Portsmouth was being sampled (and there was uncertainty about whether it was contaminated), Chesapeake issued a potentially confusing news release indicating that its water supply was uncontaminated. Before the release was issued, the EMC checked with the State to determine whether the fact that Chesapeake water was not being sampled was an indication that it was not contaminated. Subsequently, the release implied that the entire Chesapeake water supply was uncontaminated, while sampling was ongoing in Norfolk and Portsmouth. When information appears to be conflicting to the public, it should be checked again with the State EOC for accuracy before being released. Similarly, releases relating to agricultural matters should be reviewed by the Agricultural Agent before issuance, thereby eliminating the dissemination of erroneous or misleading information. (Objective 13; NUREG-0654, E.5. and G.4.a.)

Reason ARCA Unresolved: The Chesapeake City EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-53R: – Lancaster County EOC

Description: The EOC was not staffed with appropriate personnel – EMC, PIO, Communications Officer, and Agricultural Agent – as outlined in the extent-of-play agreement. Mobilization of personnel should be implemented in accordance with both the extent-of-play agreement and the County RERP. (Objective 2; NUREG-0654, E.2.)

Reason ARCA Unresolved: The Lancaster County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-54R: – Lancaster County EOC

Description: No media briefings, actual or simulated, were held during this phase of the exercise. The ability to brief the media in an accurate, coordinated, and timely manner should be demonstrated as outlined in the County RERP. (Objective 14) (NUREG-0654, G.3.a.)

Reason ARCA Unresolved: The Lancaster County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-55R: – Lancaster County EOC

Description: No rumor control function was established in accordance with the County RERP. During the next exercise, a rumor control function should be established. (Objective 15; NUREG-0654, G.4.c.)

Reason ARCA Unresolved: The Lancaster County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-56R: – Matthews County EOC

Description: No rumor control function was established at the EOC. Even though the County Administrator stated he would establish a rumor control station in an actual emergency, a rumor control function should be established, as outlined in the County RERP. (Objective 15; NUREG-0654, G.4.c.)

Reason ARCA Unresolved: The Matthews County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-57R: – Middlesex County EOC

Description: The County experienced a primary communication problem because all telephones were being used at one time, and none were available for up to 13 minutes. A dedicated line should be established for outgoing calls. (Objective 4; NUREG-0654, F.1.b.)

Reason ARCA Unresolved: The Middlesex County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-58R: – Petersburg City EOC

Description: Mobilization of the staff, which should have included the EMC, PIO, Communications Officer, and Agricultural Agent, was not completed as specified in the extent-of-play agreement. The PIO did not participate. Personnel should be mobilized in accordance with both the extent-of-play agreement and the County RERP. (Objective 2; NUREG-0654, E.2.)

Reason ARCA Unresolved: The Petersburg City EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-59R: – Southampton County EOC

Description: No radio or television was available in the EOC for monitoring the release of information. Therefore, one or the other form of communication should be made available to monitor all information released to the public. (Objective 14; NUREG-0654, G.3.a.)

Reason ARCA Unresolved: The Southampton County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-60R: – State EOC/Virginia Beach City EOC

Description: Even though the State EOC used an incorrect Virginia Criminal Information Network (VCIN) number for the City of Virginia Beach, the city EOC should have notified the State of its technical difficulties with the VCIN. Procedures should be implemented to confirm the receipt and transmittal of VCIN messages. Local EOCs should check with the State when they experience unusual lags. (Objective 4; NUREG-0654, F.1.b.)

Reason ARCA Unresolved: The Virginia Beach City EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.

Issue No.: SYX91-61R: – Greenville County EOC

Description: Even though the PIO was able to handle all the rumor control calls coming into the EOC, this may not be the case in a real emergency. Therefore, a rumor control function should be established as outlined in the county RERP. (Objective 15; NUREG-0654, J.10.d. and J.10.g.)

Reason ARCA Unresolved: The Greenville County EOC was not scheduled for demonstration during the 1999 SPS plume exposure pathway exercise.

Recommendation: The ability to resolve this issue should be demonstrated during the next scheduled SPS ingestion exposure pathway exercise.