U.S. Department of Homeland Security
One Independence Mall, Sixth Floor
615 Chestnut Street
Philadelphia, PA 19106-4404

FEMA

NOV 04 2009

NRC Headquarters Document Control Desk
US Nuclear Regulatory Commission
Washington, DC 20555-0001

Enclosed is the final report for the Surry Power Station (SPS) Plume Radiological Emergency Preparedness Exercise held on August 4, 2009.

If you have any questions, please contact Darrell Hammons at (215) 931-5546.

Sincerely,

Darrell Hammons

Darrell Hammons
Regional Assistance Committee
Chairperson

Enclosure

AX45
NRR

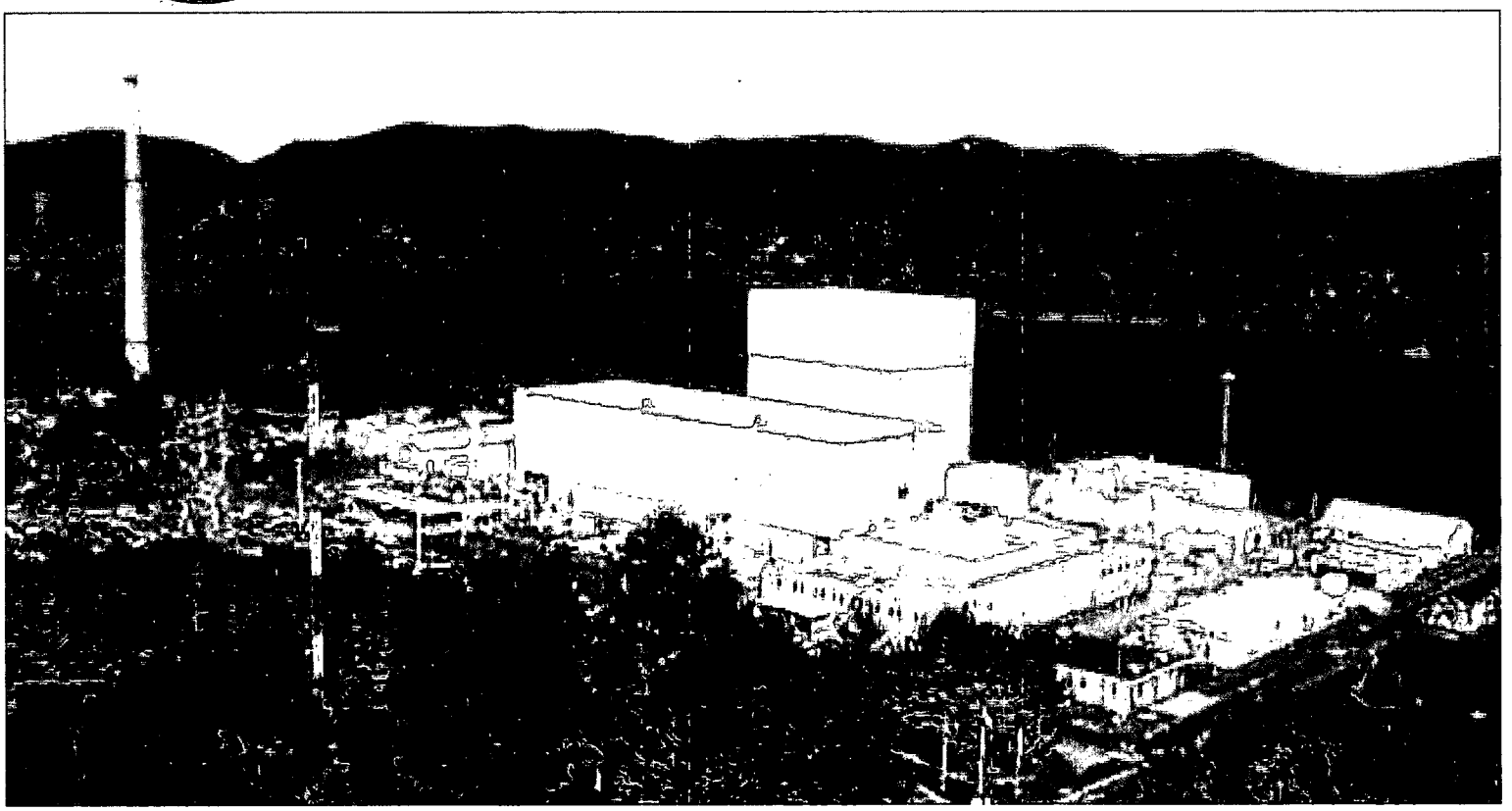
Surry Power Station Exercise August 4, 2009

Final Report – Radiological Emergency Preparedness Program

October 28, 2009

FEMA

FEMA Region III



This page intentionally left blank.

Final Exercise Report

Surry Power Station

Licensee:	**Dominion Generation**
Exercise Date:	**August 4, 2009**
Report Date:	**October 28, 2009**

U.S. DEPARTMENT OF HOMELAND SECURITY
NATIONAL PREPAREDNESS DIVISION
RADIOLOGICAL EMERGENCY PREPAREDNESS
TECHNOLOGICAL HAZARDS BRANCH

FEMA REGION III
ONE INDEPENDENCE MALL, 6TH FLOOR
615 CHESTNUT STREET
PHILADELPHIA, PENNSYLVANIA 19106-4404

This page intentionally left blank.

TABLE OF CONTENTS

APPENDICES

LIST OF TABLES

I. Executive Summary

On August 4, 2009, a full-scale plume exercise was conducted in the 10-mile plume exposure pathway, emergency planning zone (EPZ) around the Surry Power Station (SPS) by the Federal Emergency Management Agency (FEMA), Region III. Out of sequence (OOS) demonstrations were conducted on June 15-18, 2009. A medical services (MS-1) drill was also held on June 15, 2009. The purpose of the exercise and the OOS demonstrations was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise and OOS demonstrations were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

The most recent prior full-scale exercise at this site was conducted on June 26, 2007. 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 risk jurisdictions of Isle of Wight County, James City County, the City of Newport News, Surry County, the City of Williamsburg, and York County; and the support jurisdictions of Charles City County, the City of Hampton, New Kent County, and the City of Poquoson who were evaluated at this exercise.

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

This report contains the final evaluation of the biennial exercise and the evaluation of the following OOS activities:

- *General Population Monitoring and Decontamination:* Conducted on June 15, 2009 at 1600 in New Kent County; June 16, 2009 at 1830 in Surry County; June 17, 2009 at 0900 in York County and 1400 in City of Newport News; June 18, 2009 at 0900 in Charles City County and 1400 in Isle of Wight County.

- *Mass Care – Shelter:* Conducted on June 15, 2009 at 1600 in New Kent County; June 16, 2009 at 1830 in Surry County; June 17, 2009 at 0900 in York County and 1400 in City of Newport News; June 18, 2009 at 0900 in Charles City County and 1400 in Isle of Wight County.

- *Emergency Worker Decontamination:* Conducted on June 15, 2009 at 1600 in New Kent County; June 16, 2009 at 1830 in Surry County; June 17, 2009 at 0900 in York County and 1400 in City of Newport News; June 18, 2009 at 0900 in Charles City County and 1400 in Isle of Wight County.

- *Medical Services Drill:* Conducted on June 15, 2009 at 0800 at the Virginia Commonwealth University Medical Center.

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies and one Area Requiring Corrective Action (ARCA) identified as a result of this exercise. The ARCA was resolved within 90 days; the resolution is documented in this report. Six ARCAs from a previous exercise were successfully demonstrated at this exercise. Three new planning issues were identified (see Appendix 5: Planning Issues).

II. Introduction

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

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

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

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

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

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

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

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

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

A REP exercise was conducted on August 4, 2009, to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving Surry Power Station (SPS). The purpose of this exercise report is to present the exercise results and findings on the performance of the off-site response organizations (OROs) during a simulated radiological emergency.

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

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

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

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

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

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

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

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

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

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

including the corrective action demonstrated, as well as ARCAs assessed during previous exercises and scheduled for demonstration at this exercise which remain unresolved.

The final section of the report is comprised of the appendices, which present the following supplementary information: Acronyms and Abbreviations, Exercise Evaluators and Team Leaders, Exercise Evaluation Area Criteria and Extent of Play (EOP) Agreement, Exercise Scenario, and Planning Issues.

This page intentionally left blank.

III. Exercise Overview

Contained in this section are data and basic information relevant to the August 4, 2009 exercise to test the offsite emergency response capabilities in the area surrounding Surry Power Station (SPS). This section of the exercise report includes a description of the plume pathway emergency planning zone (EPZ), a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

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 855.2 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 site is at the end of State Route 650, eight miles from the town of Surry, seven miles south of Colonial Williamsburg, and four and one half 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 five 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 10-mile EPZ contains an estimated residential population of 137,475. According to 2000 census data, 4,011 people reside within a five 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 and Water Country USA could have in excess of 50,000 visitors daily.

A total of 65 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, organizations, and units of government participated in the SPS out of sequence (OOS) activities on June 15-18, 2009, or the exercise on August 4, 2009.

COMMONWEALTH OF VIRGINIA

Virginia Cooperative Extension
Virginia Department of Agriculture and Community Service
Virginia Department of Emergency Management
Virginia Department of Fire Programs
Virginia Department of Forests
Virginia Department of General Services
Virginia Department of Health
Virginia Department of Health, Division of Radiological Health and Safety Regulation
Virginia Department of Rail and Public Transportation
Virginia Department of Social Services
Virginia Department of Transportation
Virginia Infrastructure Technologies Agency
Virginia National Guard; 34th Civil Support Team
Virginia Office of Commonwealth Preparedness
Virginia State Police

RISK JURISDICTIONS

Isle of Wight County

Isle of Wight County Administration
Isle of Wight County Emergency Communications
Isle of Wight County Emergency Management Agency
Isle of Wight County Emergency Medical Services
Isle of Wight County Information Technology/Geographic Information System
Isle of Wight County Public Information
Isle of Wight County Public Schools
Isle of Wight County Sheriff's Office
Isle of Wight County Social Services
Portsmouth Fire and Rescue
Rushmere Volunteer Fire Department
Smithfield Volunteer Fire

James City County

James City County 911 Dispatch
James City County Administration
James City County Citizen Services

James City County Community Services
James City County Emergency Communications
James City County Emergency Management
James City County Fire
James City County General Services
James City County Information Technology
James City County Police
James City County Real Estate/Geographic Information System
James City County Services Authority
James City County Social Services
James City County Transportation
Virginia Cooperative Extension
Virginia Department of Health
Williamsburg-James City County Public Schools
Williamsburg-James City County Transportation

City of Newport News

City of Newport News Administration
City of Newport News Codes and Compliance
City of Newport News Emergency Information Center
City of Newport News Emergency Operations Center
City of Newport News Engineering
City of Newport News Finance
City of Newport News Fire
City of Newport News Human Resources
City of Newport News Human Services/Social Services
City of Newport News Library
City of Newport News Parks and Recreation
City of Newport News Planning
City of Newport News Police
City of Newport News Public Schools
City of Newport News Public Works
City of Newport News Security
City of Newport News Self Insurance
City of Newport News TV
City of Newport News Waterworks
Dozier Middle School
Passage Middle School
US Army

City of Williamsburg

City of Williamsburg 911 Dispatch
City of Williamsburg Administration
City of Williamsburg Emergency Management

City of Williamsburg Emergency Medical Services
City of Williamsburg Emergency Operations Center
City of Williamsburg Finance
City of Williamsburg Fire
City of Williamsburg Health
City of Williamsburg Human Services
City of Williamsburg Parks and Recreation
City of Williamsburg Police
City of Williamsburg Public Schools
City of Williamsburg Public Works
Matoaka Elementary School
Norge Elementary School
Virginia Department of Health
Warwick High School
Williamsburg-James City County Public Schools
Williamsburg-James City County Transportation

Surry County

Surry County 911 Dispatch
Surry County Administration
Surry County Agricultural Extension
Surry County Board of Supervisors
Surry County Emergency Management
Surry County Emergency Management, Radiological Office
Surry County Emergency Medical Services
Surry County Health
Surry County Magistrate
Surry County Planning and Mapping
Surry County Public Information
Surry County Public Schools
Surry County Sheriff's Office
Surry County Social Services
Surry County Volunteer Fire Company
Virginia Department of Transportation

York County

Bruton High School
National Park Service
Naval Weapons Station
Queens Lake Middle School
Walter Mill Elementary School
York County Administration
York County Community Services
York County Computer Support

York County Emergency Communications
York County Emergency Management
York County Fire and Life Safety
York County Fiscal Management Services
York County Public Information
York County Public Schools
York County Sheriff's Office
York County Transportation

SUPPORT JURISDICTIONS

Charles City County

Charles City County Board of Supervisors
Charles City County Building Inspections
Charles City County Communications
Charles City County Emergency Management
Charles City County Health
Charles City County Mental Health
Charles City County Planning
Charles City County Public Schools
Charles City County Public Works
Charles City County Sheriff's Office
Charles City County Social Services
Charles City County Volunteer Fire Company
Virginia Cooperative Extension
Virginia Department of Transportation

City of Hampton

City of Hampton 911 Dispatch
City of Hampton Administration
City of Hampton Emergency Preparedness
City of Hampton Fire
City of Hampton Health
City of Hampton Human Services
City of Hampton Information Technology
City of Hampton Library
City of Hampton Media and Community Relations
City of Hampton Police
City of Hampton Public Schools
City of Hampton Public Works
City of Hampton-City of Newport News School Board

New Kent County

New Kent County 911 Dispatch
New Kent County Board of Supervisors
New Kent County Emergency Management
New Kent County Fire and Rescue
New Kent County Public Information
New Kent County Public Schools
New Kent County Sheriff's Office
New Kent County Social Services

City of Poquoson

City of Poquoson Administration
City of Poquoson Central Dispatch
City of Poquoson Emergency Management
City of Poquoson Emergency Message Center
City of Poquoson Finance
City of Poquoson Fire
City of Poquoson Police
City of Poquoson Public Works
City of Poquoson School Board

MEDICAL SERVICES DRILL

Virginia Commonwealth University Medical Center
Surry County Volunteer Rescue Squad

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 Service/Radio Amateur Civil Emergency Services, including the following clubs:
- Charles City County
- City of Hampton
- City of Newport News
- City of Williamsburg
- New Kent County
- Surry County
- Tidewater Radio Association
- York County

American Red Cross, including the following local chapters:
- Colonial Virginia Chapter

Hampton Area Chapter
York-Poquoson Chapter
College of William and Mary
Colonial Williamsburg Foundation
Dominion Generation
Eastern State Hospital
Environment Support Systems
Virginia Emergency Response Team
Williamsburg Community Hospital

C. Exercise Timeline

Table 1, on the following page, presents the times at which key events and activities occurred during the SPS exercise on August 4, 2009. Also included are times notifications were made to the participating jurisdictions/functional entities.

TABLE 1: EXERCISE TIMELINE

DATE and SITE: *August 4, 2009; Surry Power Station*

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action Was Taken													
		Virginia EOC	LEOF	Accident Assessment	JPIC	Isle of Wight Co. EOC	James City Co. EOC	City of Newport News EOC	Surry Co. EOC	City of Williams-burg EOC	York Co. EOC	Charles City Co. EOC	City of Hampton EOC	New Kent Co. EOC	City of Poquoson EOC
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	N/A
Alert	0813	0826	0826	0826	0827	0826	0826	0826	0826	0840	0826	0826	0826	0826	0826
Site Area Emergency	0933	0941	0934	0934	0940	0941	0941	0941	0941	0941	0941	0941	0941	0941	0941
General Emergency	1050	1057	1050	1050	1051	1057	1057	1057	1057	1057	1057	1057	1057	1057	1057
Simulated Radioactivity Release Began	1057	1057	1047	1047	1057	1057	1057	1057	1057	1057	1057	1057	1057	1057	1057
Simulated Radioactivity Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational	N/A	0920	0908	0908	0848	0916	0920	0903	0900	0950	0933	0955	0933	0938	0905
Declaration of Local Emergency	N/A	N/A	N/A	N/A	N/A	1122	1131	0950	1132	1119	1010	1022	1143	1217	1105
Declaration of State Emergency	N/A	1104	1114	1114	1107	1104	1107	1104	1105	1132	1104	1104	1104	1104	1104
Exercise Terminated	N/A	1339	1350	1350	1245	1344	1340	1245	1300	1340	1335	1342	1325	1300	1305
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	N/A
Evacuation of State Parks		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0951	N/A	N/A	N/A	N/A
Precautionary Evacuation of Schools		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1012	N/A	N/A	N/A
Agriculture Advisory		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
Livestock Advisory		0955	N/A	0955	1016	1045	N/A	N/A	1054	N/A	N/A	N/A	N/A	N/A	N/A
1st A&N Decision: Evacuate Sub Areas 5, 6, 7, 8, 9, 10		1130	N/A	N/A	1153	1135	1131	1135	1130	1137	1130	N/A	N/A	N/A	N/A
1st Siren Activation		1139	N/A	N/A	N/A	N/A	N/A	N/A	1139	N/A	N/A	N/A	N/A	N/A	N/A
1st EAS		1149	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 A&N Decision: Evacuate Sub Area 3		1222	N/A	N/A	1222	1228	1226	1227	1226	1227	1227	N/A	N/A	N/A	N/A
2nd Siren Activation		1240	N/A	N/A	N/A	N/A	N/A	N/A	1227	N/A	N/A	N/A	N/A	N/A	N/A
2nd EAS		1244	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 Decision: Emergency workers and general public advised to take KI.		1330	1330	1330	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Legend: N/A – Not Applicable

IV. 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 4, 2009, biennial Radiological Emergency Preparedness (REP) exercise. The exercise was held to test the offsite emergency response capabilities of local governments in the 10-mile emergency planning zone (EPZ) surrounding the Surry Power Station (SPS).

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of the exercise evaluation area criteria contained in the REP Exercise Evaluation Methodology. Detailed information on the exercise evaluation area criteria and the extent of play (EOP) agreement used in this exercise are found in Appendix 3 of this report.

A. Summary Results of Exercise Evaluation

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

M	Met (No Deficiency or Area Requiring Corrective Action (ARCA) assessed and no unresolved ARCAs from prior exercises)
A	ARCA(s) assessed
A[1]	ARCA(s) assessed, but successfully re-demonstrated
R	Resolved ARCA(s) from prior exercises
Blank	Not Demonstrated (Reason explained in Section IV.B)

This page intentionally left blank.

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: *August 4, 2009; Surry Power Station*

JURISDICTION/LOCATION	1. a. 1	1. b. 1	1. c. 1	1. d. 1	1. e. 1	2. a. 1	2. b. 1	2. b. 2	2. c. 1	2. d. 1	2. e. 1	3. a. 1	3. b. 1	3. c. 1	3. c. 2	3. d. 1	3. d. 2	3. e. 1	3. e. 2	3. f. 1	4. a. 1	4. a. 2	4. a. 3	4. b. 1	4. c. 1	5. a. 1	5. a. 2	5. a. 3	5. b. 1	6. a. 1	6. b. 1	6. c. 1	6. d. 1
COMMONWEALTH OF VIRGINIA																																	
Virginia Emergency Operations Center	M		M	M	M	M	M	M	M				M			A[1]										M			M				
Local Emergency Operations Facility			M	M	M																					M							
Joint Public Information Center																													M				
Emergency Operations Facility (VDH & BRH)			M	M	M	M	M					M	M									M											
Virginia Field Monitoring Team 1				M	M/R							M	M								M	M	M										
Virginia Field Monitoring Team 2				M	M							M	M								M	M	M/R										
RISK JURISDICTIONS																																	
ISLE OF WIGHT COUNTY																																	
Isle of Wight County EOC	M		M	M	M	M			M				M	M		M	M					M/R				M		M	M				
Isle of Wight County School District															M																		
Carrollton Elementary School															M																		
Windsor Middle School															M																		
Windsor High School															M																		
Staging Area and TCP/ACP				M	M							M	M			M																	
Field Monitoring Team				M	M							M	M								M		M										
Exception Areas Route Alerting				M	M							M	M															M					
Back-up Route Alerting				M	M							M	M															M					
Emergency Worker Decontamination					M							M	M																	M	M		
General Population Monitoring													M																				
Mass Care – Shelter		M			M																											M	
JAMES CITY COUNTY																																	
James City County EOC	M		M	M	M	M			M				M	M		M	M					M				M		M	M				
Staging Area and TCP/ACP				M	M							M	M			M	M																
Field Monitoring Team				M	M							M	M								M		M										
Back-up Route Alerting				M	M							M	M															M					
CITY OF NEWPORT NEWS																																	
City of Newport News EOC	M		M	M	M	M			M				M	M		M	M					M				M		M	M				
City of Newport News School District															M																		
Passage Middle School															M																		
Dozier Middle School															M																		
Woodside Middle School															M																		
Carver Elementary School															M																		
Charles Elementary School															M																		
Staging Area and TCP/ACP				M	M							M	M			M	M																

LEGEND: M = Met (no Deficiency or ARCA(s) assessed) A = ARCA(s) assessed A[1] = ARCA assessed but successfully re-demonstrated
R = Resolved ARCA(s) from prior exercises Blank = Not scheduled for demonstration

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: *August 4, 2009; Surry Power Station*

JURISDICTION/LOCATION	1.a.1	1.b.1	1.c.1	1.d.1	1.e.1	2.a.1	2.b.1	2.b.2	2.c.1	2.d.1	2.e.1	3.a.1	3.b.1	3.c.1	3.c.2	3.d.1	3.d.2	3.e.1	3.e.2	3.f.1	4.a.1	4.a.2	4.a.3	4.b.1	4.c.1	5.a.1	5.a.2	5.a.3	5.b.1	6.a.1	6.b.1	6.c.1	6.d.1
Field Monitoring Team				M	M							M	M								M		M										
Back-up Route Alerting				M	M							M	M															M					
Emergency Worker Decontamination					M							M	M																	M			
General Population Monitoring													M																				
Mass Care – Shelter																																M	
CITY OF WILLIAMSBURG																																	
City of Williamsburg EOC	M	M	M	M	M	M			M				M	M		M	M					M				M		M	M				
City of Williamsburg – School District															M																		
Warhill High School															M																		
Matoaka Elementary School															M																		
Norge Elementary School															M																		
Staging Area and TCP/ACP				M	M							M	M			M	M																
Field Monitoring Team				M	M							M	M								M		M/R										
Back-up Route Alerting				M	M							M	M															M					
SURRY COUNTY																																	
Surry County EOC	M	M	M	M	M	M			M				M	M		M	M					M				M		M	M				
Surry County School District															M																		
Surry County High School															M																		
Staging Area and TCP/ACP				M	M							M	M			M	M																
Field Monitoring Team				M	M							M	M								M		M										
Exception Areas Route Alerting				M	M							M	M															M					
Back-up Route Alerting				M	M							M	M															M					
Emergency Worker Decontamination												M																		M	M		
General Population Monitoring													M																				
Mass Care – Shelter		M			M																											M	
YORK COUNTY																																	
York County EOC	M		M	M	M	M			M				M	M		M	M					M				M		M	M				
York County School District															M																		
Waller Mill Elementary School															M																		
Queens Lake Middle School															M																		
Bruton High School															M																		
Staging Area and TCP/ACP				M	M							M	M			M	M																
Field Monitoring Team				M	M							M	M								M		M										
Back-up Route Alerting				M	M							M	M															M					
Emergency Worker Decontamination					M							M																		M	M		
General Population Monitoring													M																				
Mass Care – Shelter																																M	

LEGEND: M = Met (no Deficiency or ARCA(s) assessed)
R = Resolved ARCA(s) from prior exercises
A = ARCA(s) assessed
Blank = Not scheduled for demonstration
A^1 = ARCA assessed but successfully re-demonstrated

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: *August 4, 2009; Surry Power Station*

JURISDICTION/LOCATION	1. a. 1	1. b. 1	1. c. 1	1. d. 1	1. e. 1	2. a. 1	2. b. 1	2. b. 2	2. c. 1	2. d. 1	2. e. 1	3. a. 1	3. b. 1	3. c. 1	3. c. 2	3. d. 1	3. d. 2	3. e. 1	3. e. 2	3. f. 1	4. a. 1	4. a. 2	4. a. 3	4. b. 1	4. c. 1	5. a. 1	5. a. 2	5. a. 3	5. b. 1	6. a. 1	6. b. 1	6. c. 1	6. d. 1
SUPPORT JURISDICTIONS																																	
CHARLES CITY COUNTY																																	
Charles City County EOC	M		M	M	M																								M				
Emergency Worker Decontamination					M/R							M																		M	M		
General Population Monitoring													M																				
Mass Care – Shelter																																M	
CITY OF HAMPTON																																	
City of Hampton EOC	M		M	M	M																								M				
NEW KENT COUNTY																																	
New Kent County EOC	M/R	M	M	M	M																								M				
Emergency Worker Decontamination					M							M																		M	M		
General Population Monitoring													M																				
Mass Care – Shelter		M																														M	
CITY OF POQUOSON																																	
City of Poquoson EOC	M		M	M	M																								M				
MEDICAL SERVICES DRILL																																	
Virginia Commonwealth University Medical Center					M	M						M																					M
Surry County Volunteer Rescue Squad																																	M

LEGEND: M = Met (no Deficiency or ARCA(s) assessed)
R = Resolved ARCA(s) from prior exercises

A = ARCA(s) assessed
Blank = Not scheduled for demonstration

A^1 = ARCA assessed but successfully re-demonstrated

TABLE 2. SUMMARY RESULTS OF EXERCISE EVALUATION
DATE AND SITE: ***August 4, 2009; Surry Power Station***

This page intentionally left blank.

LEGEND: M = Met (no Deficiency or ARCA(s) assessed)
R = Resolved ARCA(s) from prior exercises
A = ARCA(s) assessed
Blank = Not scheduled for demonstration
A^1 = ARCA assessed but successfully re-demonstrated

B. Status of Jurisdictions Evaluated

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

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

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

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

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

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

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

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

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

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

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

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

- **Plant Site Identifier** – A two-digit number corresponding to the Utility Billable Plant Site Codes.

- **Exercise Year** – The last two digits of the year the exercise was conducted.

- **Evaluation Area Criterion** – A letter and number corresponding to the criteria in the FEMA REP Exercise Evaluation Methodology.

- **Issue Classification Identifier** – (D = Deficiency, A = ARCA). Only Deficiencies and ARCAs are included in exercise reports.

- **Exercise Issue Identification Number** – A separate two digit indexing number assigned to each issue identified in the exercise.

1.0 COMMONWEALTH OF VIRGINIA

1.1 Virginia Emergency Operations Center

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

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: 3.d.1 (Resolved)

Issue Number: 62-09-3.d.1-A-01

Condition: The access control of waterways was not addressed according to plans and procedures.

- There is no evidence that the Norfolk Naval Shipyard nor the Norfolk Naval Station were contacted to establish access control of boats and ships on the James River.
- There is no evidence whether the Jamestown Ferry was fully closed or commandeered for response operations.

Possible Cause: With regard to the general access control of the James River waterways, it appeared that access to the James River waterways were left uncontrolled as there was no evidence of contact with the Commander, Fifth U.S. Coast Guard (USCG) District, Norfolk Naval Shipyard, Norfolk Naval Station, or Northrop Grumman Newport News Shipyard. The Action Checklist appeared to be misinterpreted. The language in the Action Checklist for Site Area Emergency (SAE)/General Emergency (GE) says to establish control of boats and ships on the James River in the vicinity of the Surry Power Station (SPS). Additionally, the Action Checklist only references making contact with the USCG, whereas the plan references Commander, Fifth USCG District, Norfolk Naval Shipyard, Norfolk Naval Station, or Northrop Grumman Newport News Shipyard.

With regard to the Jamestown Ferry, it appeared that at approximately 1100, though not logged, the Virginia Emergency Operations Center (VEOC) requested that the Jamestown Ferry remain in operation. Later, the Virginia Emergency Response Team (VERT) Coordinator explained to the evaluator that he wished the Jamestown Ferry to remain open in order to utilize it as a form of ingress and egress for emergency workers (EWs) and response equipment. At approximately 1115, though not logged,

the Virginia Department of Transportation (VDOT) closed the Jamestown Ferry. The VERT Coordinator and other direction/control staff were unaware that the Jamestown Ferry had been fully closed until the end of the exercise. The language in the Action Checklist says to close the Jamestown Ferry at SAE/GE; the language in the Virginia extent of play (EOP) says to close the Jamestown Ferry when appropriate. This could lead to confusion about whether and/or when the Jamestown Ferry should be closed. Additionally, VDOT may have closed the Jamestown Ferry because it has been standard practice.

References: NUREG-0654, J.10.j;
Virginia EOP, Radiological Emergency Response, Annex A, ESF #1 – Transportation;
Virginia EOP, Radiological Emergency Response, Appendix 1: Direction and Control, Tab A;
Virginia EOP, Radiological Emergency Response, Appendix 2: Task Assignments; and
Virginia EOP, Radiological Emergency Response Plan (RERP), Appendix 12: Emergency Highway Operations.

Effect: The James River waterways and Jamestown Ferry were left uncontrolled and could have lead to additional radiation exposure to the general public.

Recommendation: According to plans, the Jamestown Ferry should only be closed by VDOT on the recommendation of the VEOC. The content of the VEOP and Action Checklist should be aligned with regard to James River waterways and Jamestown Ferry access control. Additionally, if the use of the Jamestown Ferry as an ingress and egress mode for EWs and response equipment is a viable option, it should be included in the plan and procedures and appropriate exposure control measures should be included.

Commonwealth Response: Agree. COVRERP Action Checklist revised.

Corrective Action Demonstrated: The Virginia Emergency Operations Center (VEOC) Radiological Emergency Response Plan Action Checklist has been updated to notify the Coast Guard Sector Hampton Roads and request establishment of traffic control on the James River in the vicinity of the Surry Power Station until otherwise notified. In addition, the revised checklist includes notification of VDOT and consideration of closing the James River

Ferry to the public or limiting its use to ingress and egress of emergency workers. This update was submitted in response to the draft SERF report and closes out issue number 62-09-3.d.1-A-01

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

1.2 Local Emergency Operations Facility

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

1.3 Joint Public Information Center

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

1.4 Emergency Operations Facility

a. **MET:** 1.c.1 2.a.1 3.a.1 4.a.2
1.d.1 2.b.1 3.b.1
1.e.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

1.5 Virginia Field Monitoring Team 1

a. **MET:** 1.d.1 3.a.1 4.a.1
1.e.1 3.b.1 4.a.2
4.a.3

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue Number: 62-06-1.e.1-A-02

Condition: The modified administrative exposure limit (0.3 Roentgen (R) reporting level) could not be read using the issued dosimetry.

Corrective Action Demonstrated: During the 2009 Surry exercise, it was confirmed that direct-reading dosimeters (DRDs) had been replaced by Science Applications International Corporation (SAIC) Model PD-3i-s digital alarming dosimeters (DADs) that can be read in the microR range. This now permits personnel radiation exposures to be accurately measured in cases where exposure limits are reduced due to the application of a high dosimeter correction factor. The use of the DADs was successfully demonstrated by both of the Virginia Field Monitoring Teams (FMTs) during the 2009 Surry exercise. FMT members properly entered the DAD serial numbers and readings on the revised Emergency Worker (EW) Exposure Record Form (REC-1). In addition, a job aid entitled "EW Information Card" also addresses the use of the new DADs. This closes out issue 62-06-1.e.1-A-02.

f. **PRIOR ARCAs – UNRESOLVED:** None

1.6 Virginia Field Monitoring Team 2

a. **MET:** 1.d.1 3.a.1 4.a.1
1.e.1 3.b.1 4.a.2
4.a.3

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue Number: 62-07-4.a.3-A-02

Condition: State Field Monitoring Team (FMT) B did not demonstrate appropriate radiological monitoring techniques.

The team did not monitor their survey instruments while in transit; the instruments were stored in the back of the truck and were not accessible.

They also did not relocate to a low background area to count their air sample. The air sample head was disassembled and counted while still in the plume centerline.

Corrective Action Demonstrated: FMT 2 (formerly FMT B) followed their plan and procedures and continually observed their instruments. During transit and throughout the exercise the team placed their instruments in the audio mode and visually monitored them. All readings were documented on the team's Field Team Survey Record and communicated to the local emergency operations facility (LEOF).

After FMT 2 completed their air and particulate sample, the team relocated to a low background area to purge, bag and label samples. Low background was an area having radiation readings equal to the initial readings taken at the staging area during the team's instrument checkout. FMT 2 successfully demonstrated all monitoring, sampling and counting activities according to their plan and procedures. This closes out issue 62-07-4.a.3-A-02.

f. **PRIOR ARCAs – UNRESOLVED:** None

2.0 RISK JURISDICTIONS

2.1 Isle of Wight County

2.1.1 Isle of Wight County Emergency Operations Center

a. **MET:**

1.a.1	2.a.1	3.b.1	4.a.2	5.a.1
1.c.1	2.c.1	3.c.1		5.a.3
1.d.1		3.d.1		5.b.1
1.e.1		3.d.2		

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue Number: 62-07-4.a.2-A-03

Condition: The Isle of Wight Radiological Officer (RO) did not provide field data to the Department of Radiological Health (DRH) per the procedure which states that these readings are to be provided to the DRH Field Team Coordinator via fax or telephone.

Corrective Action Demonstrated: The Isle of Wight RO followed procedures located in the Isle of Wight RO Checklist to provide Field Monitoring Team (FMT) data to the local emergency operations facility (LEOF) via fax and phone as obtained by local FMTs. As information from the Isle of Wight FMTs was observed, it was relayed to the Isle of Wight Emergency Operations Center (EOC) via amateur radio. Information received was confirmed via amateur radio and recorded on a Message Form and given to the county RO. Upon receipt, this information was relayed to the LEOF via phone by the County RO, recorded in the master EOC log, and faxed to the LEOF. The county RO was in close proximity to the amateur radio operator to answer any questions from FMT data and provide instructions back to the FMTs as directed by the LEOF. This closes out issue number 62-07-4.a.2-A-03.

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.2 Isle of Wight County School District

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.2.1 Carrollton Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.2.2 Windsor Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.2.3 Windsor High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.3 Staging Area and Traffic and Access Control Points

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.4 Field Monitoring Team

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.5 Exception Areas Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.6 Back-up Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.7 Emergency Worker Decontamination Station

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.8 General Population Monitoring

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.1.9 Mass Care – Shelter

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.2 James City County

2.2.1 James City County Emergency Operations Center

a. **MET:**

1.a.1	2.a.1	3.b.1	4.a.2	5.a.1
1.c.1	2.c.1	3.c.1		5.a.3
1.d.1		3.d.1		5.b.1
1.e.1		3.d.2		

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.2.2 Staging Area and Traffic and Access Control Points

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.2.3 Field Monitoring Team

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.2.4 Back-up Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3 City of Newport News

2.3.1 City of Newport News Emergency Operations Center

a. **MET:** 1.a.1 2.a.1 3.b.1 4.a.2 5.a.1
1.c.1 2.c.1 3.c.1 5.a.3
1.d.1 3.d.1 5.b.1
1.e.1 3.d.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.2 City of Newport News School District

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.2.1 Passage Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.2.2 Dozier Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.2.3 Woodside Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.2.4 Carver Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED: None**

2.3.2.5 Charles Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED: None**

2.3.3 Staging Area and Traffic and Access Control Points

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.4 Field Monitoring Team

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.5 Back-up Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.6 Emergency Worker Decontamination Station

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.7 General Population Monitoring

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.3.8 Mass Care – Shelter

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4 City of Williamsburg

2.4.1 City of Williamsburg Emergency Operations Center

a. **MET:**

1.a.1	2.a.1	3.b.1	4.a.2	5.a.1
1.b.1	2.c.1	3.c.1		5.a.3
1.c.1		3.d.1		5.b.1
1.d.1		3.d.2		
1.e.1				

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.2 City of Williamsburg School District

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.2.1 Warhill High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.2.2 Matoaka Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.2.3 Norge Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.3 Staging Area and Traffic and Access Control Points

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.4 Field Monitoring Team

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue Number: 62-07-4.a.3-A-06

Condition: The Field Monitoring Team (FMT) incorrectly used a pancake probe to measure ambient radiation.

Corrective Action Demonstrated: During the 2009 Surry exercise, the City of Williamsburg FMT demonstrated correct use of their survey instruments. The FMT was using a Ludlum 2240I survey meter with a Ludlum 44-6 probe. All survey results were consistently documented and reported in the correct units of measurement (Roentgen (R)/hour). This closes out issue number 62-07-4.a.3-A-06.

f. **PRIOR ARCAs – UNRESOLVED:** None

2.4.5 Back-up Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5 Surry County

2.5.1 Surry County Emergency Operations Center

a. **MET:** 1.a.1 2.a.1 3.b.1 4.a.2 5.a.1
1.b.1 2.c.1 3.c.1 5.a.3
1.c.1 3.d.1 5.b.1
1.d.1 3.d.2
1.e.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.2 Surry County School District

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.2.1 Surry County High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.3 Staging Area and Traffic and Access Control Points

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.4 Field Monitoring Team

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.5 Exception Areas Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.6 Back-up Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.7 Emergency Worker Decontamination Station

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.8 General Population Monitoring

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.5.9 Mass Care – Shelter

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6 York County

2.6.1 York County Emergency Operations Center

a. **MET:** 1.a.1 2.a.1 3.b.1 4.a.2 5.a.1
1.c.1 2.c.1 3.c.1 5.a.3
1.d.1 3.d.1 5.b.1
1.e.1 3.d.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.2 York County School District

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.2.1 Waller Mill Elementary School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.2.2 Queens Lake Middle School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.2.3 Bruton High School

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.3 Staging Area and Traffic and Access Control Points

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.4 Field Monitoring Team

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.5 Back-up Route Alerting

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.6 Emergency Worker Decontamination Station

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.7 General Population Monitoring

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

2.6.8 Mass Care – Shelter

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.0 SUPPORT JURISDICTIONS

3.1 Charles City County

3.1.1 Charles City County Emergency Operations Center

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.1.2 Emergency Worker Decontamination Station

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue Number: 62-07-1.e.1-A-08

Condition: The two Ludlum Model 2240I hand-held radiation monitoring instruments with Ludlum 44-9 pancake probes were beyond the expiration date for their calibration. Both instruments were calibrated on November 22, 2005, with a calibration expiration date of November 22, 2006.

Corrective Action Demonstrated: The calibration tags on the Ludlum Model 2240I hand-held radiation monitoring instruments with Ludlum 44-9 pancake probes indicated

that the instruments and their accompanying attachments were calibrated on February 23, 2009. The instruments are scheduled for re-calibration on February 20, 2010. This closes out issue number 62-07-1.e.1-A-08.

f. **PRIOR ARCAs – UNRESOLVED:** None

3.1.3 General Population Monitoring

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.1.4 Mass Care – Shelter

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.2 City of Hampton

3.2.1 City of Hampton Emergency Operations Center

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.3 New Kent County

3.3.1 New Kent County Emergency Operations Center

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** 1

Issue Number: 62-07-1.a.1-A-09

Condition: A New Kent County school system representative did not respond to the Emergency Operations Center (EOC) mobilization emails and page sent to New Kent County responders at 0930. A follow-up phone call to the School Board office, made at 1127, was unsuccessful. (A School Board representative was finally contacted at 1204 regarding the (simulated) opening of an Evacuation Assembly Center (EAC) at the New Kent County High School).

Corrective Action Demonstrated: At 0903, August 4, 2009, the New Kent County EOC began notification of EOC staff. The New Kent County school system representative was one of the first to respond to the EOC after the notification was made, arriving at 0930. This closes out issue number 62-07-1.a.1-A-09.

f. **PRIOR ARCAs – UNRESOLVED:** None

3.3.2 Emergency Worker Decontamination Station

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.3.3 General Population Monitoring

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.3.4 Mass Care – Shelter

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

3.4 City of Poquoson

3.4.1 City of Poquoson Emergency Operations Center

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

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

4.0 MEDICAL SERVICES DRILL

4.1 Virginia Commonwealth University Medical Center

a. **MET:** 1.e.1 2.a.1 3.a.1 6.d.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

4.2 Surry County Volunteer Rescue Squad

a. **MET:** 6.d.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

APPENDIX 1:
Acronyms and Abbreviations

ANS	Alert and Notification System
ACP	Access Control Point
ARC	American Red Cross
ARC 3031	American Red Cross document *Mass Care – Preparedness and Operations*
ARCA	Area Requiring Corrective Action
ATL	Assistant Team Leader
ATWS	Anticipated Transient Without Scram
CDE	Committed Dose Equivalent
CERC	Corporate Emergency Response Center
CFR	Code of Federal Regulations
CRS	Control Room Simulator
DAD	Digital Alarming Dosimeter
DHS	Department of Homeland Security
DRD	Direct-Reading Dosimeter
EAC	Evacuation Assembly Center
EAL	Emergency Action Level
EAS	Emergency Alert System
ECL	Emergency Classification Level
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EOP	Extent of Play
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ESF	Emergency Support Function
EW	Emergency Worker(s)
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
GE	General Emergency
ICF	ICF International
JPIC	Joint Public Information Center
KI	Potassium Iodide

LEOF	Local Emergency Operations Facility
LP	Loose Parts
mR	Milliroentgen(s)
MS-1	Medical Services Drill
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1 (Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants), November 1980
OOS	Out of Sequence
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAO	Public Affairs Officer
PAR	Protective Action Recommendation
PIO	Public Information Officer
PORV	Pressure Operated Relief Valve
R	Roentgen(s)
RAC	Regional Assistance Committee
RCS	Reactor Coolant System
REC-1	Exposure Record Form
Rem	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
RO	Radiological Officer
SAE	Site Area Emergency
SAIC	Science Applications International Corporation
SAV	Site Assistance Visit
SEM	Shift Emergency Manager
SPS	Surry Power Station
SRD	Self Reading Dosimeter
TCP	Traffic Control Point
TEDE	Total Effective Dose Equivalent
TL	Team Leader
USCG	United States Coast Guard

VDEM	Virginia Department of Emergency Management
VDH-RHP	Virginia Department of Health, Radiological Health Program
VDOT	Virginia Department of Transportation
VERT	Virginia Emergency Response Team

APPENDIX 2:
Exercise Evaluators and Team Leaders

The following is a list of the personnel who evaluated the Surry Power Station (SPS) exercise on August 4, 2009 and out of sequence (OOS) activities on June 15-18, 2009. Evaluator Team Leaders (TL) and Assistant Team Leaders (ATL) are indicated by the letters after their organization's name. The organization each evaluator represents is indicated by the following abbreviations:

DHS	Department of Homeland Security
NRC	U.S. Nuclear Regulatory Commission
ICF	ICF Consulting, Inc.
FAA	Federal Aviation Administration

OBSERVERS-AT-LARGE	EVALUATOR	ORGANIZATION
Acting Regional Assistance Committee (RAC) Chair	Richard Kinard	DHS
Project Officer	Joe Suders	DHS
ICF Regional Coordinator	Roger Kowieski	ICF

PLUME EXERCISE – August 4, 2009

COMMONWEALTH OF VIRGINIA		
EVALUATION SITE	**EVALUATOR**	**ORGANIZATION**
Virginia Emergency Operations Center (EOC)	Richard Kinard Marcy Campbell William Vocke Alexis Gearing James Greer	DHS (TL) ICF (ATL) ICF ICF ICF
Local Emergency Operations Facility	Robert Trojanowski	NRC
Joint Public Information Center	Debra Schneck	ICF
Emergency Operations Facility	Reggie Rodgers	ICF (Technical TL)
State Field Monitoring Team 1	Richard Watts	ICF
State Field Monitoring Team 2	Nicholas DePierro	ICF

RISK JURISDICTIONS		
EVALUATION SITE	**EVALUATOR**	**ORGANIZATION**
Isle of Wight County		
Isle of Wight County EOC	James McClanahan Andrew Hower Tracy Green	ICF (TL) DHS (ATL) ICF

RISK JURISDICTIONS		
EVALUATION SITE	**EVALUATOR**	**ORGANIZATION**
Isle of Wight County School District	Clark Cofer	ICF
Carrollton Elementary School	Clark Cofer	ICF
Windsor Middle School	Clark Cofer	ICF
Windsor High School	Clark Cofer	ICF
Staging Area & TCP/ACP	Sonia Eischen	ICF
Field Monitoring Team	Patrick Taylor	ICF
Exception Areas Route Alerting	William Palmer	ICF
Back-up Route Alerting	Kim Wood	ICF
James City County		
James City County EOC	Chris Thompson Bob Neff Michael Burriss Karl Fippinger	FAA (TL) DHS (ATL) ICF ICF
Staging Area & TCP/ACP	Eric Carter	ICF
Field Monitoring Team	Keith Earnshaw	ICF
Back-up Route Alerting	Clark Duffy	ICF
City of Newport News		
City of Newport News EOC	Roy Smith Simon Guereca Tina Lai Heidi Crabtree	ICF (TL) ICF (ATL) DHS ICF
City of Newport News School District	Kent Tosh	ICF
Passage Middle School	Kent Tosh	ICF
Dozier Middle School	Kent Tosh	ICF
Woodside Middle School	Bruce Swiren	ICF (TL)
Carver Elementary School	Bruce Swiren	ICF (TL)
Charles Elementary School	Bruce Swiren	ICF (TL)
Staging Area & TCP/ACP	Robert Lemeshka	ICF
Field Monitoring Team	Jon Fox	ICF
Back-up Route Alerting	David Kayen	ICF
City of Williamsburg		
City of Williamsburg EOC	Rosemary Samsel Mike Shuler John Flynn	ICF (TL) DHS (ATL) ICF
City of Williamsburg School District	Gary Goldberg	ICF

RISK JURISDICTIONS		
EVALUATION SITE	**EVALUATOR**	**ORGANIZATION**
Warhill High School	Gary Goldberg	ICF
Matoaka Elementary School	Gary Goldberg	ICF
Norge Elementary School	Gary Goldberg	ICF
Staging Area & TCP/ACP	Carl Wentzell	ICF
Field Monitoring Team	Paul Cormier	ICF
Back-up Route Alerting	Robert Host	ICF
Surry County		
Surry County EOC	Bart Freeman Albert Lookabaugh Richard Wessman Larry Visniesky	DHS (TL) ICF (ATL) ICF ICF
Surry County School District	Larry Visniesky	ICF
Surry County High School	Larry Visniesky	ICF
Staging Area & TCP/ACP	Michael Meshenberg	ICF
Field Monitoring Team	John Zeidler	ICF
Exception Areas Route Alerting	Ernest Boaze	ICF
Back-up Route Alerting	Robert Duggleby	ICF
York County		
York County EOC	John Price Wendy Swygert John Wills	DHS (TL) ICF (ATL) ICF
York County School District	William O'Brien	ICF
Waller Mill Elementary School	William O'Brien	ICF
Queens Lake Middle School	William O'Brien	ICF
Bruton High School	William O'Brien	ICF
Staging Area & TCP/ACP	Robert Vork	ICF
Field Monitoring Team	Ronald Bonner	ICF
Back-up Route Alerting	Stephen Chambers	ICF

SUPPORT JURISDICTIONS		
EVALUATION SITE	**EVALUATOR**	**ORGANIZATION**
Charles City County		
Charles City County EOC	James Groves	ICF (TL)
City of Hampton		
City of Hampton EOC	Thomas Hegele	ICF
New Kent County		
New Kent County EOC	DeeEll Fifield	ICF
City of Poquoson		
City of Poquoson EOC	Greg Dawkins	ICF

OOS ACTIVITIES – June 15-18, 2009

RISK JURISDICTIONS		
EVALUATION SITE	**EVALUATOR**	**ORGANIZATION**
Isle of Wight County		
Emergency Worker Decontamination Station	Michael Shuler	DHS
General Population Monitoring/ Decontamination	Robert Neff	DHS
Mass Care – Shelter	Robert Neff	DHS
City of Newport News		
Emergency Worker Decontamination Station	Bart Freeman	DHS
General Population Monitoring/ Decontamination	Joseph Suders	DHS
Mass Care – Shelter	Joseph Suders	DHS
Surry County		
Emergency Worker Decontamination Station	Robert Neff	DHS
General Population Monitoring/ Decontamination	Robert Neff	DHS
Mass Care – Shelter	Michael Shuler	DHS

RISK JURISDICTIONS		
EVALUATION SITE	EVALUATOR	ORGANIZATION
York County		
Emergency Worker Decontamination Station	Andrew Hower	DHS
General Population Monitoring/ Decontamination	Tina Lai	DHS
Mass Care – Shelter	Tina Lai	DHS

SUPPORT JURISDICTIONS		
EVALUATION SITE	EVALUATOR	ORGANIZATION
Charles City County		
Emergency Worker Decontamination Station	Tina Lai	DHS
General Population Monitoring/ Decontamination	Andrew Hower	DHS
Mass Care – Shelter	Andrew Hower	DHS
New Kent County		
Emergency Worker Decontamination Station	Joseph Suders	DHS
General Population Monitoring/ Decontamination	Bart Freeman	DHS
Mass Care – Shelter	Bart Freeman	DHS

MEDICAL SERVICES DRILL		
EVALUATION SITE	EVALUATOR	ORGANIZATION
Virginia Commonwealth University Medical Center	Joseph Suders	DHS
Surry County Volunteer Rescue Squad	Tina Lai	DHS

APPENDIX 3:
Exercise Evaluation Area Criteria and Extent of Play Agreement

This appendix contains the extent of play (EOP) agreement from the Commonwealth of Virginia approved by the Federal Emergency Management Agency (FEMA) Region III on July 24, 2009.

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

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

COMMONWEALTH OF VIRGINIA

METHOD OF OPERATION, EVALUATION CRITERIA AND EXTENT OF PLAY

For
Virginia Operational Plan Exercise No. 1-2009

Surry Power Station (SPS) and Offsite Response Organizations (OROs)
Tuesday, August 4, 2009

Out of Sequence (OOS) Demonstrations: June 15-18, 2009

Medical Services (MS-1) Drill
Virginia Commonwealth University Medical Center and Surry County Volunteer Rescue Squad
Monday, June 15, 2009

Evacuation Assembly Center (EAC) Exercises
New Kent County High School (New Kent County)
Monday, June 15, 2009

L.P. Jackson Middle School (Surry County)
Tuesday, June 16, 2009

Tabb High School (York County)
Wednesday, June 17, 2009

Warwick High School (City of Newport News)
Wednesday, June 17, 2009

Smithfield Middle School (Isle of Wight County)
Thursday, June 18, 2009

Charles City County School Complex (Charles City County)
Thursday, June 18, 2009

METHOD OF OPERATION

This Method of Operation document includes activities for the full-scale plume exercise (August 4, 2009), and the OOS Activities (June 15-18, 2009).

Surry Power Station

The plant's simulated events, radiation readings, and emergency classifications will trigger offsite exercise actions. A pre-approved exercise scenario will be used. The SPS will notify the Virginia Emergency Operations Center (EOC) and the risk Counties of emergency classifications.

A. Plume Exercise – August 4, 2009

1. Virginia Emergency Response Team (VERT) Operations at Virginia EOC

   The Virginia Department of Emergency Management (VDEM) augmented by designated VERT personnel from various Emergency Support Functional (ESF) areas will comprise initial operations at the Virginia EOC.

   A VDEM Public Information Officer (PIO) will also be assigned to the Joint Public Information Center (JPIC) located at Dominion's Corporate Emergency Response Center (CERC), Innsbrook and will coordinate information between the Virginia EOC and Dominion CERC and participate in a joint State/Dominion media briefing. The Public Inquiry Center will also participate at the JPIC.

   A VDEM State On-Scene Coordinator will be deployed to the local emergency operations facility (LEOF) at SPS to provide technical information and guidance to the Virginia EOC decision makers.

2. Virginia Department of Health – Radiological Health Program (VDH/RHP)

   Personnel from the VDH/RHP will be present and participate in the following aspects of the exercise as follows:

   - Plume Exercise – Virginia EOC (ESF 8)
   - Plume Exercise – SPS LEOF
   - Plume Exercise – Two State Field Monitoring Teams (FMTs) – Surry Virginia Department of Transportation (VDOT) residency shop. Both State FMTs will stage and deploy from the Surry VDOT residency shop.

B. OOS Activities – June 15-18, 2009

On June 15, 2009, beginning at 0800, the Surry County Volunteer Rescue Squad (pre-positioned at SPS Training Center – Mock up Area) will respond to exercise related

messages (controller injects) requesting offsite transport of a simulated injured/contaminated individual to the Virginia Commonwealth University Medical Center.

EAC Demonstrations:
On June 16-18, 2009 (schedule below), the risk-area localities (Surry County, Isle of Wight County, York County, and Newport News) and host-area localities (New Kent County and Charles City County) localities will activate their respective EACs based on exercise messages (controller injects).

- Monday, June 15, 1600 – New Kent High School
- Tuesday, June 16, 1830 – L.P. Jackson Middle School
- Wednesday, June 17, 0900 – Tabb High School
- Wednesday, June 17, 1400 – Warwick High School
- Thursday, June 18, 0900 – Charles City County School Complex
- Thursday, June 18, 1400 – Smithfield Middle School

The Virginia EOC, risk and host area locality EOCs will NOT be evaluated during the OOS component. VDEM and Dominion personnel will serve as "controllers" at the identified EACs.

C. Localities Designated to Participate

1. Plume Phase Exercise – August 4, 2009

The six risk localities (Surry County, Isle of Wight County, York County, James City County and Cities of Newport News and Williamsburg) and the four host localities (New Kent County, Charles City County, and the Cities of Hampton and Poquoson), in coordination with VDEM, will demonstrate the capability to mobilize appropriate staff, activate their respective EOCs and implement emergency response operations to include sheltering and/or evacuation. The Virginia EOC will provide direction and coordination to risk and host localities. Actual sheltering or evacuation of the general public will be simulated.

Surry and Isle of Wight Counties will demonstrate primary route alerting. All risk localities (Surry County, Isle of Wight County, James City County, York County, Newport News City, and Williamsburg City) will demonstrate back-up route alerting, traffic/access control (via interview) and FMT.

School demonstrations will take place (via interview) in the respective risk locality EOCs during the plume exercise.

D. Controllers

A controller will be present in the VEOC and in each of the risk and host locality EOCs on August 4, 2009 and at the EACs on June 15-18, 2009. Controllers are not players. Controllers will provide pre-approved injects and information to the players, as appropriate.

Controllers will provide information regarding radiological readings during the monitoring of personnel during the EAC demonstrations. Live radioactive sources will not be used. Controllers will also be assigned to the two State FMTs and to the six local FMTs and will provide radiological data to teams as appropriate.

E. Observers

VDEM staff, local emergency management personnel, and/or nuclear power plant personnel will be assigned, if required, to key locations for the purpose of observing, noting response actions and conditions, and recording observations for future use. Observers will not take an active part in the proceedings, but will interact with staff members to the extent necessary to fulfill their observer responsibilities. Coaching of players by observers is not permitted except to provide training to participants awaiting a re-demonstration (refer to paragraph 9).

F. Department of Homeland Security (DHS) Evaluators

1. Plume Phase Exercise – August 4, 2009

OOS Activities (June 15-18, 2009): Federal evaluators will be present at the identified OOS demonstration sites listed above.

Plume Phase Exercise (August 4, 2009): Evaluators representing the Federal government will be present at the identified risk and host locality EOC's to evaluate player response to the actual and simulated events in the exercise scenario. Additionally, State and local FMTs will be federally evaluated.

G. Exercise Termination

The risk and host locality EOCs will remain operational until the exercise is officially terminated by the State. The Virginia EOC will issue an Exercise Termination Message via controller inject.

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

Re-demonstrations:
During the OOS demonstrations on June 15-18, 2009, or the plume phase demonstrations on August 4, 2009, any activity that is not satisfactorily demonstrated may be re-demonstrated by the participants during the exercise, provided it does not negatively interfere with the exercise. Refresher training may be provided by the players, observers, and/or controllers. Evaluators are not permitted to provide refresher training. Re-demonstrations will be negotiated between the players, observers, controllers, and evaluators. VDEM may advise the Regional Assistance Committee (RAC) Chair prior to initiating any re-demonstrations. It is permissible to extend the demonstration window, within reason, to accommodate the re-demonstration. Activities corrected from a re-demonstration will be so noted.

EXTENT OF PLAY

1. EMERGENCY OPERATIONS CENTER MANAGEMENT

1.a Mobilization

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

Extent of Play:
Responsible offsite response organizations (OROs) should demonstrate the capability to receive notification of an emergency situation from the licensee, verify the notification, and contact, alert, and mobilize key emergency personnel in a timely manner. Responsible OROs should demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations. Activation of facilities should be completed in accordance with the plan and/or procedures. Pre-positioning of emergency personnel is appropriate, in accordance with the EOP agreement, at those facilities located beyond a normal commuting distance from the individual's duty location or residence. Further, pre-positioning of staff for OOS demonstrations is appropriate in accordance with the EOP agreement. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
The State will notify and mobilize appropriate response agencies which have responsibilities in the Virginia EOC, at the appropriate emergency classification level and in accordance with established plans and procedures in a timely manner. VDEM and DRH will provide staffing as per procedures.

Personnel assigned to the following Locations will be pre-positioned:
LEOF at SPS (VDEM and DRH personnel) JJPIC at Dominion's CERC State FMT 1, State FMT 2 and Mobile laboratory at VDOT Residency Shop, Route 10 in Surry County.

The State will demonstrate the capability to receive notification of an emergency situation from the licensee and verify notification. The State will demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations.

Risk and Host Jurisdictions Negotiated Extent of Play:
Local jurisdictions will notify and mobilize appropriate response agencies and key personnel assigned to the local EOCs and media centers, field workers and EACS, (OOS) if activated, at the appropriate Emergency Classification Level (ECL) and as per procedures in a timely manner.

The risk and host jurisdictions will demonstrate the capability to receive notification of an emergency situation from the licensee and verify notification. The risk and host jurisdictions will demonstrate the activation of facilities for immediate use by mobilized personnel when they arrive to begin emergency operations.

1.b Facilities

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

Extent of Play:
Facilities will only be specifically evaluated for this criterion if they are new or have substantial changes in structure or mission. Responsible OROs should demonstrate the availability of facilities that support the accomplishment of emergency operations. Some of the areas to be considered are: adequate space, furnishings, lighting, restrooms, ventilation, backup power and/or alternate facility (if required to support operations). Facilities must be set-up based on the ORO's plans and/or procedures and be demonstrated as they would be used in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

- Surry County
- City of Williamsburg
- New Kent County

1.c Direction and Control

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

Extent of Play:
Leadership personnel should demonstrate the ability to carry out essential functions of the response effort, for example: keeping the staff informed through periodic briefings and/or other means, coordinating with other appropriate OROs and ensuring completion of requirements and requests. All activities associated with direction and control must be performed based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless otherwise noted above or indicated in the EOP agreement.

State Negotiated Extent of Play:
Overall direction and control of state activities will be demonstrated in the Virginia EOC, LEOF and JPIC. The Governor's representative or a simulated designee will be present and will simulate coordinating decisions with the Governor's Office. The State Coordinator or designee will demonstrate the ability to keep staff informed, hold briefings and coordinate activities with other OROs. Both the State and risk jurisdictions should ensure the completion of requirements and requests. Demonstration will be in accordance with plans and/or procedures.

Risk and Host Jurisdictions Negotiated Extent of Play:
The emergency services coordinator or designee will demonstrate his ability to keep staff informed, hold briefings, and coordinate activities with other OROs. Both the State and risk jurisdictions should ensure the completion of requirements and requests. Demonstration will be in accordance with plans and/or procedures.

1.d Communications Equipment

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

Extent of Play:
Responsible OROs will demonstrate that a primary and at least one back-up system are fully functional at the beginning of an exercise. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units should be used as needed for the transmission and receipt of exercise messages. All facilities and FMTs should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exists. The specific communications capabilities of OROs should be commensurate with that specified in the response plan and/or procedures. Exercise scenarios could require the failure of a communications system and the use of an alternate system, as negotiated in the EOP agreement. All activities associated with the management of communications capabilities must be demonstrated based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless otherwise noted above or in the EOP agreement.

State, Risk, and Host Jurisdictions Negotiated Extent of Play:
This evaluation area will be demonstrated in all participating locations, in accordance with plans and procedures. OROs will demonstrate that at least one communication system is functional. 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 back-up communication pathway will be demonstrated only if primary communication pathway fails.

1.e Equipment and Supplies to Support Operation

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

Extent of Play:
Equipment within the facility (facilities) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged. All instruments, should be inspected, inventoried, and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV–700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument or calibrated frequency can be verified by other means. Additionally, instruments being used to measure activity should have a range of readings sticker affixed to the side of the instrument. The above considerations should be included in the following criteria: 4.a.1 for FMT equipment, 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment), 6.a.1 for reception center and emergency worker (EW) facilities' equipment and 6.d.1 for ambulance and medical facility equipment. Sufficient quantities of appropriate direct-reading dosimeters (DRDs) and permanent record dosimetry and dosimeter chargers should be available for issuance to all categories of EWs that could be deployed from that facility. Appropriate DRD should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and/or procedures. Dosimetry should be inspected for electrical leakage at least annually and replaced, if necessary. CDV–138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, and/or through a staff assistance visit (SAV). Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by EWs, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) within the plume pathway emergency planning zone (EPZ). Available quantities of dosimetry and KI and their storage locations(s) will be confirmed by physical inspection at the storage location(s) or through documentation of current inventory submitted during the exercise, provided in the Annual Letter of Certification submission, and/or verified during a SAV. Available supplies of KI should be within the expiration date indicated on KI bottles or blister packs. As an alternative, the OROs may produce a letter from a certified private or State laboratory indicating that the KI supply remains potent, in accordance with U.S. Pharmacopoeia standards. At locations where traffic and access control personnel are deployed, appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or have their availability described. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State, Risk, and Host Jurisdictions Negotiated Extent of Play:
Equipment within the facility should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays will be demonstrated.

Sufficient quantities of appropriate dosimetry should be available for issuance to all EWs.

Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by EWs, as indicated on rosters.

Risk Jurisdictions:
At locations where traffic and access control personnel are deployed (simulated at the staging area), appropriate equipment (e.g., vehicles, barriers, traffic cones and signs, etc.) should be available or their availability described.

- Traffic Control Point (TCP)/Access Control Point (ACP) maps *(pages from the plans may be used)*
- Population by protective action zone *(pages from the plans may be used)*

Demonstration of the KI inventory rosters for the general public will occur in the local EOC's by Health Representatives.

OOS – June 15-18, 2009:
EACs:

- New Kent County High School (New Kent County)
- L.P. Jackson Middle School (Surry County)
- Tabb High School (York County)
- Warwick High School (City of Newport News)
- Charles City County School Complex (Charles City County)
- Smithfield Middle School (Isle of Wight County)

Participating jurisdictions will provide their respective KI inventories (through written documentation) for the general public at the EACs as well as the list of previously distributed KI.

Sufficient quantities of appropriate dosimetry should be available for issuance to all EWs.

Outstanding Issues:
None

2. PROTECTIVE ACTION DECISION MAKING

2.a Emergency Worker Exposure Control

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

Extent of Play:
Responsible OROs authorized to send EWs into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and/or procedures. Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of preauthorized levels and to the number of EWs receiving radiation dose above pre-authorized levels. As appropriate, OROs should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established Protective Action Guide (PAG) for KI administration. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
VDEM and DRH working in the emergency operations facility (EOF) will rely on the facility's area monitor system and will not perform 30-minute dosimeter readings. If the area monitoring system fails or facility dose rates are shown to increase, dosimetry will be issued to facility personnel in accordance with Dominion Generation procedures, and Dominion Generation facility monitoring personnel will monitor exposure. State FMTs and mobile lab workers will demonstrate EW exposure control, as per procedures.

As appropriate, DRH will demonstrate the capability to make decisions on the distribution and administration of KI, as a protective measure, based on the calculated thyroid dose resulting from a field sample exceeds the established PAGs for KI administration.

Risk Jurisdictions Negotiated Extent of Play:
Risk Jurisdictions authorized to send EWs into the plume exposure pathway EPZ will demonstrate a capability to meet the criterion based on their emergency plans and/or procedures. As appropriate, risk jurisdictions will demonstrate the capability for the distribution and administration of KI, as a protective measure, based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAGs for KI administration. This distribution will occur only if the State Commissioner of Health or his designee orders the ingestion of KI by EWs.

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

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

Extent of Play:
During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the OROs should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (PARs) for decision-makers based on available information and recommendations from the licensee and FMT data, if available. When the licensee provides release and meteorological data, the OROs also considers this data. The OROs should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAG to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format. Differences greater than a factor of 10 between projected doses by the licensee and the OROs should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The OROs should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
The initial PAR is based on plant conditions. Scenario driven doses may not exceed the Environmental Protection Agency (EPA) PAGs, as the plant condition-based PAR will dictate the appropriate evacuation/sheltering recommendation.

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

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

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

Extent of Play:
OROs should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff. The dose assessment personnel may provide additional PARs based on the subsequent dose projections, FMT data, or information on plant conditions. The decision makers should demonstrate the capability to change protective actions as appropriate based on these projections. If the ORO has determined that KI will be used as a protective measure for the general public under offsite plans, then the ORO should demonstrate the capability to make decisions on the distribution and administration of KI as a protective measure for the general public to supplement sheltering and evacuation. This decision should be based on the ORO's plan and/or procedures or projected thyroid dose compared with the established PAG for KI administration. The KI decision making process should involve close coordination with appropriate assessment and decision-making staff. If more than one ORO is involved in decision-making, OROs should communicate and coordinate PADs with affected OROs. OROs should demonstrate the capability to communicate the contents of decisions to the affected jurisdictions. All decision-making activities by ORO personnel must be performed based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
Decisions to evacuate and shelter any portion of the affected population will be demonstrated by the VDEM State Coordinator or his representative in the Virginia EOC. These decisions will be coordinated with risk jurisdictions. The State Commissioner of Health (or designee) will determine whether and when to authorize the administration of KI to EWs within the 10-mile EPZ.

2.c Protective Action Decisions for Protection of Special Populations

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

Extent of Play:
Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are: weather conditions, shelter availability, availability of transportation assets, risk of evacuation versus risk from the avoided dose, and precautionary school evacuations. In situations where an institutionalized population cannot be evacuated, the administration of KI should be considered by the OROs. Applicable OROs should demonstrate the capability to alert and notify all public school systems/districts of emergency conditions that are expected to or may necessitate protective actions for students. Contacts with public school systems/districts must be actual. In accordance with plans and/or procedures, OROs and/or officials of public school systems/districts should demonstrate the capability to make prompt decisions on protective actions for students. Officials should demonstrate that the decision making process for protective actions considers (that is, either accepts automatically or gives heavy weight to) PARs made by ORO personnel, the emergency alert level (EAL) at which these recommendations are received, preplanned strategies for protective actions for that EAL, and the location of students at the time (for example, whether the students are still at home, en route to the school, or at the school). All decision-making activities associated with protective actions, including consideration of available resources, for special population groups must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

Risk Jurisdictions Negotiated Extent of Play:
All risk jurisdictions will have a school representative and social services representatives available at their EOC. When dictated by events and according to procedures, officials will demonstrate the following:

- The ability to alert and notify all public school systems/districts of emergency conditions that are expected or may necessitate protective actions for students;
- What PAD they would make for schools located within the 10-mile EPZ;
- Impact on students residing in the 10-mile EPZ, but attending schools outside the EPZ; and
- Impact on other special needs populations.

EOC representatives will consider relevant factors, such as weather, shelter availability and time evacuation estimates when determining what protective actions to recommend for special populations. EOC representatives will also consider relevant factors such as the availability of transportation assets, risk of evacuation versus risk from the avoided dose, precautionary school evacuation, and the administration of KI in situations where an institutionalized population cannot be evacuated.

3. PROTECTIVE ACTION IMPLEMENTATION

3.a Implementation of Emergency Worker Exposure Control

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

Extent of Play:
OROs should demonstrate the capability to provide appropriate DRD and permanent record dosimetry, dosimeter chargers, and instructions on the use of dosimetry to EWs. For evaluation purposes, appropriate DRD is defined as dosimetry that allows individual(s) to read the administrative reporting limits (pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent (TEDE)) and maximum exposure limits (pre-established for those EWs involved in life saving activities) contained in the ORO's plans and/or procedures. Each EW should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated. During a plume phase exercise, EWs should demonstrate the procedures to be followed when administrative exposure limits and turn back values are reached. The EW should report accumulated exposures during the exercise as indicated in the plans and/or procedures. OROs should demonstrate the actions described in the plan and/or procedures by determining whether to replace the worker, to authorize the worker to incur additional exposures or to take other actions. If scenario events do not require EWs to seek authorizations for additional exposure, evaluators should interview at least two EWs, to determine their knowledge of whom to contact in the event authorization is needed and at what exposure levels. EWs may use any available resources (e.g., written procedures and/or coworkers) in providing responses. Although it is desirable for all EWs to each have a DRD, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be maintained for all members of the team by one dosimeter worn by the team leader. EWs who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, EOCs, and communications centers, may have individual DRDs or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
VDEM and DRH 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 facility dose rates are shown to increase, dosimetry will be issued to facility personnel in accordance with

Dominion Generation procedures, and exposure will be monitored by Dominion Generation facility monitoring personnel. State FMTs and mobile lab workers will demonstrate EW exposure control, as per procedures.

Risk Jurisdictions Negotiated Extent of Play:
Appropriate EWs in the risk jurisdictions will demonstrate EW exposure control, as per procedures. Radiological Officers (ROs) will be evaluated on their management (equipping and briefing) of field workers at the staging area location where field workers are equipped and briefed.

OOS – June 15-18, 2009:

EACs:

- New Kent County High School (New Kent County)
- L.P. Jackson Middle School (Surry County)
- Tabb High School (York County)
- Warwick High School (City of Newport News)
- Charles City County School Complex (Charles City County)
- Smithfield Middle School (Isle of Wight County)

Appropriate EWs in the host and risk jurisdictions will demonstrate EW exposure control, as per procedures.

The EAC RO will provide a briefing to demonstrate this evaluation area. All EW personnel (non-shelter personnel) who are assigned to the EAC will be provided with a radiological briefing, dosimetry, and appropriate forms. They will demonstrate the reading and recording of their dosimeter according to their plans and/or procedures and demonstrate their knowledge of EW exposure control.

Outstanding Issues:
None

3.b Implementation of KI Decisions

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained. (NUREG-0654, E.7; J.10.e, f)

Extent of Play:
OROs should demonstrate the capability to make KI available to EWs, institutionalized individuals, and, where provided for in the ORO's plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of EWs and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary. For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures. EWs should demonstrate the basic knowledge of procedures for the use of KI whether or not the scenario drives the use of KI. This can be accomplished by an interview with the evaluator. All activities must be based on the ORO's plans and/or procedures and be completed, as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

VDH-RHP Negotiated Extent of Play:
The State Commissioner of Health will determine whether and/or when to authorize the administration of KI to EWs.

Risk Jurisdictions Negotiated Extent of Play:
Risk jurisdictions will have a sufficient quantity of KI on hand in their EOC or at some other storage location or be capable of demonstrating its availability through written documentation (inventory sheets or letter). The KI intended for use will not exceed the expiration date. EWs, as appropriate, will receive KI according to their procedures and will be briefed or given information on its use. Included organizations will demonstrate the ability to develop and maintain lists of EWs who have ingested KI, including documentations of the date(s) and time(s) they were instructed to ingest KI. Simulated KI can be used. EWs will demonstrate through interview the basic knowledge of procedures for the use of KI whether or not the scenario drives the use of KI. Implementation of KI use by the general public will not be demonstrated on August 4, 2009.

OOS – June 15-18, 2009:
EACs:

- New Kent County High School (New Kent County)
- L.P. Jackson Middle School (Surry County)
- Tabb High School (York County)

- Warwick High School (City of Newport News)
- Charles City County School Complex (Charles City County)
- Smithfield Middle School (Isle of Wight County)

The participating jurisdictions will open and demonstrate their EAC set-up. As part of this demonstration, the health department representatives at the EAC will demonstrate the implementation of the KI decision for the general public and the implementation of the KI distribution plan and health annex. Participating jurisdictions will provide their respective KI inventories for the general public at the EACs as well as the list of previously distributed KI. Health department representatives at the EAC will demonstrate the administration and distribution of the tablets (simulated). The process for distribution will be in accordance with ORO plans and/or procedures.

3.c Implementation of Protective Actions for Special Populations

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

Extent of Play:
Applicable OROs should demonstrate the capability to alert and notify (for example, provide PARs and emergency information and instructions) special populations (hospitals, nursing homes, correctional facilities, mobility impaired individuals, transportation dependent, etc.). OROs should demonstrate the capability to provide for the needs of special populations in accordance with the ORO's plans and/or procedures. Contact with special populations and reception facilities may be actual or simulated, as agreed to in the EOP. Some contacts with transportation providers should be actual, as negotiated in the EOP. All actual and simulated contacts should be logged. All implementing activities associated with protective actions for special populations must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

Risk Jurisdictions Negotiated Extent of Play:
Jurisdictions will demonstrate that a list of any special needs individuals within their portion of the 10-mile EPZ is maintained by Social Services. If resources are needed to assist these individuals for areas included in the PAD, the availability of these resources will be verified (e.g., through discussion and presentation of transportation methods or providers, available vehicles, etc.). Contact with any special needs individuals will be simulated. Contact with the transportation providers will occur in the EOC with transportation providers (e.g., rescue squad). All actual or simulated communications will be logged.

3.c Implementation of Protective Actions for Special Populations

Criterion 3.c.2: Offsite Response Organizations/School Officials implement protective actions for schools. (NUREG-0654, J.10.c, d, g)

Extent of Play:
Public school systems/districts shall demonstrate the ability to implement PADs for students. The demonstration shall be made as follows: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. Implementation procedures for canceling the school day, dismissing early or sheltering should be simulated by describing those procedures to evaluators. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver (and the bus driver's escort, if applicable) should be available to demonstrate knowledge of their role(s) in the school evacuation process. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified. Officials of the school system(s) should demonstrate the capability to develop and provide timely information to OROs for use in messages to parents, the general public, and the media on the status of protective actions for schools. The provisions of this criterion also apply to any private schools, private kindergartens and day care centers that participate in Radiological Emergency Preparedness (REP) exercises pursuant to the ORO's plans and/or procedures as negotiated in the EOP agreement. All activities must be based on the ORO's plans and/or procedures and be completed as they would in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

Risk Jurisdictions Negotiated Extent of Play:
This evaluation area will be demonstrated during the exercise at the local EOC. An inject message will be provided to the school superintendent or designee to initiate the tabletop interview. The superintendent or designee will discuss procedures and appropriate actions to be taken for school closing due to a radiological emergency at SPS. The superintendent or designee will make notifications via telephone to school representatives, i.e., School principal, transportation director, etc. from the local EOC. The evaluator will have actual contact with the designated school and be given the opportunity to speak with the school principal or designee to affirm that the actions they take when notification is received are appropriate and in accordance with their procedure. The school superintendent or designee will have the radiological plan available and describe what efforts are taken to inform parents of policies and procedures regarding early dismissal of children due to a radiological incident. The following schools will be contacted:

Isle of Wight County:	York County:
Carrollton Elementary School	Waller Mill Elementary School
Windsor Middle School	Queens Lake Middle School
Windsor High School	Bruton High School

City of Williamsburg/James City County: Warhill High School Matoaka Elementary School Norge Elementary School Surry County: Surry County High School	City of Newport News: Passage Middle School Dozier Middle School Woodside Middle School Carver Elementary School Charles Elementary School

3.d Implementation of Traffic and Access Control

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

Extent of Play:
OROs should demonstrate the capability to select, establish, and staff appropriate TCP/ACPs, consistent with PADs (for example, evacuating, sheltering, and relocation), in a timely manner. OROs should demonstrate the capability to provide instructions to TCP/ACP staff on actions to take when modifications in protective action strategies necessitate changes in evacuation patterns or in the area(s) where access is controlled. TCP/ACP staff should demonstrate accurate knowledge of their roles and responsibilities. This capability may be demonstrated by actual deployment or by interview, in accordance with the EOP agreement. In instances where OROs lack authority necessary to control access by certain types of traffic (rail, water, and air traffic), they should demonstrate the capability to contact the State or Federal agencies with authority to control access. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
The Virginia EOC, driven by PADs will need to demonstrate the requesting of control of air, rail and waterways to the appropriate organizations. All communication will be simulated and logged.

Risk Jurisdictions Negotiated Extent of Play:
Risk Jurisdictions, driven by the PAD to activate TCP/ACP will activate one TCP and one ACP simulated at the staging area. Both the TCP and the ACP will be established and held until evaluated. One unit (officer) will be provided to demonstrate this evaluation area. The personnel used to activate the TCP can also be the one to activate the ACP.

Risk jurisdictions will demonstrate the capability to provide instructions to TCP/ACP staff on actions to take when modifications to protective action strategies necessitate change in evacuation patterns or in the area(s) where access is controlled.

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

- Traffic Control
- Access Control
- Location of the EAC
- Dosimetry and exposure limits (reporting and turnback levels)
- Required Protective Actions

3.d Implementation of Traffic and Access Control

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

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

Risk Jurisdictions Negotiated Extent of Play:
Risk jurisdictions will demonstrate the capability and knowledge of procedures to identify and take appropriate actions concerning impediments to evacuation, as required by the scenario or controller inject messages. Actual dispatch of resources to deal with impediments, such as wreckers, will not be demonstrated; however, all contacts, actual or simulated will be logged.

4. FIELD MEASUREMENT AND ANALYSIS

4.a Plume Phase Field Measurements and Analysis

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

Extent of Play:
FMTs should be equipped with all instrumentation and supplies necessary to accomplish their mission. This should include instruments capable of measuring gamma exposure rates and detecting the presence of beta radiation. These instruments should be capable of measuring a range of activity and exposure, including radiological protection/exposure control of team members and detection of activity on the air sample collection media, consistent with the intended use of the instrument and the ORO's plans and/or procedures. An appropriate radioactive check source should be used to verify proper operational response for each low range radiation measurement instrument (less than 1 Roentgen (R)/hour) and for high range instruments when available. If a source is not available for a high range instrument, a procedure should exist to operationally test the instrument before entering an area where only a high range instrument can make useful readings. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

State Negotiated Extent of Play:
Two State FMTs, consisting of at least two individuals per team, will be staged at the Surry County VDOT Residency Shop.

Both teams will be briefed and equipped (at the Surry County VDOT Residency Shop) with the appropriate field monitoring instruments and the team will check the equipment for operability before deployment into the field.

Risk Jurisdictions Negotiated Extent of Play:
Each jurisdiction will deploy one FMT, consisting of at least two individuals per team, from the staging area within their jurisdiction.

The RO will provide a briefing, survey meters and appropriate forms to field monitors.

The field monitors will perform an operational check on the meters before being deployed into the field.

If an instrument is found to be broken, or working incorrectly, the RO will take the appropriate actions outlined in the plans and/or procedures.

4.a Plume Phase Field Measurements and Analysis

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

Extent of Play:
Responsible OROs should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment. Field measurements are needed to help characterize the release and to support the adequacy of implemented protective actions or to be a factor in modifying protective actions. Teams should be directed to take measurements in such locations, at such times to provide information sufficient to characterize the plume and impacts. If the responsibility to obtain peak measurements in the plume has been accepted by licensee FMTs, with concurrence from OROs, there is no requirement for these measurements to be repeated by State and local FMTs. If the licensee teams do not obtain peak measurements in the plume, it is the ORO's decision as to whether peak measurements are necessary to sufficiently characterize the plume. The sharing and coordination of plume measurement information among all FMTs (licensee, Federal, and ORO) is essential. Coordination concerning transfer of samples, including a chain-of-custody form, to a radiological laboratory should be demonstrated. OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (RERP), and other resources (for example, compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise. All activities must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

VDH-RHP Negotiated Extent of Play:
Two State FMTs, consisting of at least two individuals per team, will be staged at the Surry County VDOT Residency Shop. Each team will communicate results, as necessary, to the DRH representative at the LEOF. It should be noted that the overall monitoring effort is coordinated by DRH from the LEOF.

Risk Jurisdictions Negotiated Extent of Play:
Each jurisdiction will deploy one FMT (at least two individuals per team) from the staging area within their jurisdiction. The RO will provide a briefing, survey meters and appropriate forms to field monitors. The FMT will be in contact with the RO. The FMTs will report field readings to the RO who will then forward the appropriate information to DRH at the LEOF. In addition, the RO will be responsible to inform the FMTs, in a timely manner, all relevant information, including weather conditions, changes in wind direction, and all PADs.

4.a Plume Phase Field Measurements and Analysis

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

Extent of Play:
FMTs should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the FMT coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain of custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures. OROs should use Federal resources as identified in the Federal RERP, and other resources (for example, compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of both Federal and other resources participating in the exercise. All activities must be must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

VDH-RHP Negotiated Extent of Play:
Two State FMTs, consisting of at least two individuals per team, will be staged at the Surry County VDOT Residency Shop.

Each FMT will take measurements at a minimum of two locations and will operate according to procedures.

The FMTs will demonstrate the capability to determine the location of the plume. Each team will communicate results, as necessary, to the DRH representative at the LEOF. It should be noted that the overall monitoring effort is coordinated by DRH from the LEOF. Controllers will provide data to the FMTs.

Each State FMT will demonstrate the collection of at least one air sample in the field. A second air sample may be taken if needed. At least one sample will be taken to the mobile laboratory for gamma spectral analysis. Chain of Custody procedures shall be demonstrated.

Laboratory operations will not be demonstrated for the sample at the mobile laboratory. Appropriate sample analysis information will be forwarded to DRH at the LEOF.

Risk Jurisdictions Negotiated Extent of Play:
Each jurisdiction will deploy one FMT, consisting of at least two individuals per team, to a minimum of two monitoring points located within their jurisdiction. FMTs will take measurements and operate according to their procedures. The monitoring results will be reported

to their EOC, which will then be forward the appropriate information DRH at the LEOF. The controllers will have the necessary data to provide radiation levels to these FMTs.

5. EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

5.a Activation of the Prompt Alert and Notification System

Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current Federal Emergency Management Agency Radiological Emergency Preparedness guidance. (NUREG-0654, E.5, 6, 7)

Extent of Play:
Responsible OROs should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance. OROs with route alerting as the primary method of alerting and notifying the public should demonstrate the capability to accomplish the primary route alerting, following the decision to activate the alert and notification system, in a timely manner (will not be subject to specific time requirements) in accordance with the ORO's plan and/or procedures. At least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the EOP. Actual testing of the mobile public address system will be conducted at an agreed upon location. The initial message should include the elements required by current FEMA REP guidance. For exercise purposes, timely is defined as "the responsible ORO personnel or representatives demonstrate actions to disseminate the appropriate information or instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely. Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages *is not* required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation. The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system. All activities for this criterion must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, except as noted above or otherwise indicated in the EOP agreement.

VDEM and Risk Jurisdictions Negotiated Extent of Play for Surry County and James City County:

Coordination will occur between the Virginia EOC and the affected Counties with respect to the Alert and Notification System (ANS) process. Surry County and James City County have the control equipment for activation of sirens. Sirens will be coordinated and the sounding simulated at the appropriate time with the simulated activation of Emergency Alert System (EAS) taking place following the simulated activation of the sirens. The Virginia EOC is the initiating point for the activation of the EAS. Regular broadcasting will not be interrupted on the EAS Stations. Broadcast of the message(s) or test message(s) is NOT required and NOT requested. Following the decision to activate the ANS, in accordance with the ORO's plan and/or procedures, ANS activation should be accomplished in a timely manner for primary alerting/notification. This action will NOT be subject to specific time requirements.

All actions to broadcast stations will be simulated. Systems that use automatic sending technology may be demonstrated by explanation during an interview. Each risk County will demonstrate, by interview, route alerting of the hearing impaired residents within their jurisdiction. Hearing impaired notification teams will not be deployed.

Surry and Isle of Wight Counties will conduct primary route alerting for exception areas located within 0-5 miles from SPS. The designated route should be completed in a timely manner following the decision to alert and notify the public.

Each risk County will demonstrate, by interview, route alerting of the hearing impaired residents within their jurisdiction. Hearing impaired notification teams will not be deployed.

5.a Activation of the Prompt Alert and Notification System

Criterion 5.a.3: Activities associated with Federal Emergency Management Agency approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Back-up alert and notification of the public is completed within 45 minutes following the detection by the Offsite Response Organization of a failure of the primary alert and notification system. (NUREG-0654, E. 6)

Extent of Play:
OROs with FEMA approved exception areas (identified in the approved ANS Design Report) 5–10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45 minute clock will begin when the OROs make the decision to activate the ANS for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information. For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the EOP. Actual testing of the mobile public address system will be conducted at an agreed upon location.

Back-up alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Back-up route alerting only needs to be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the EOP agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the EOP agreement. Actual testing of the mobile public address system will be conducted at an agreed upon location. All activities for this criterion must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, except as noted above or otherwise indicated in the EOP agreement.

Risk Jurisdictions Negotiated Extent of Play:
Surry, Isle of Wight, James City and York Counties and the Cities of Williamsburg and Newport News will conduct back-up route alerting for a failed siren. The designated route should be completed within 45 minutes following the detection by the ORO of the siren failure.

5.b Emergency Information and Instructions for the Public and the Media

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

Extent of Play:
Subsequent emergency information and instructions should be provided to the public and the media in a timely manner and will not be subject to specific time requirements. For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely. The ORO should ensure that emergency information and instructions are consistent with PADs made by appropriate officials. The emergency information should contain all necessary and applicable instructions (for example, evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concerning pets, shelter-in-place instructions, information concerning protective actions for schools and special populations, public inquiry telephone number, etc.) to assist the public in carrying out PADs provided to them. The ORO should also be prepared to disclose and explain the ECL of the incident. At a minimum, this information must be included in media briefings and/or media releases. OROs should demonstrate the capability to use language that is clear and understandable to the public within both the plume and ingestion pathway EPZs. This includes demonstration of the capability to use familiar landmarks and boundaries to describe protective action areas. The emergency information should be all-inclusive by including previously identified protective action areas that are still valid, as well as new areas. The OROs should demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. In addition, the OROs should demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals in accordance with the plan and/or procedures. OROs should demonstrate the capability to develop emergency information in languages other than English when required by the plan and/or procedures. If ingestion pathway measures are exercised, OROs should demonstrate that a system exists for rapid dissemination of ingestion pathway information to pre-determined individuals and businesses in accordance with the ORO's plan and/or procedures. OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute media releases as the situation warrants. The OROs should demonstrate the capability to respond appropriately to inquiries from the news media. All information presented in media briefings and media releases should be consistent with PADs and other emergency information provided to the public. Copies of pertinent emergency information (for example, EAS messages and media releases) and media information kits should be available for dissemination to the media. OROs should demonstrate that an effective system is in place for dealing with calls to the public inquiry hotline. Hotline staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the hotline staff, including information that corrects false or inaccurate information when trends are noted, should be

included, as appropriate, in emergency information provided to the public, media briefings, and/or media releases. All activities for this criterion must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

VDEM Negotiated Extent of Play:
This evaluation area will be demonstrated at the Virginia EOC and JPIC. A VDEM Public Affairs Officer (PAO) at the Virginia EOC will prepare news releases. The news releases will be coordinated and exchanged with local jurisdictions. Dissemination of news releases may be accomplished by the use of fax or other means. One simulated media briefing will be demonstrated at the JPIC.

VDEM will establish a public inquiry function at the JPIC with a minimum of two individuals. Some calls will be designed so as to allow public inquiry staff to demonstrate the capability to identify trends in rumors (e.g., frequently expressed false or misleading information). The hotline staff will demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate source. Information from the hotline staff, including information that correct false, or inaccurate information when trends are noted will be included as appropriate in emergency information provided to the public, media briefings and/or media releases. Public inquiry telephone number(s) will be designated and published at the appropriate time. Public information staff will simulate monitoring EAS broadcasts to determine whether false or misleading information is being disseminated to the public. Media monitoring equipment will be available. Since no actual exercise related broadcasts will be made, the media monitoring equipment will be tested for operability and the staff will be demonstrate their capability to monitor area EAS stations. All subsequent emergency information and instruction will be provided to the public and the media in a timely manner. All emergency information and instructions are consistent with PADs made by appropriate officials. The emergency information will contain all necessary and applicable instructions (e.g. evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concern pets, shelter in place, information concerning protective action for schools and special populations, public inquiry telephone numbers, etc). The State will demonstrate the capability to use familiar landmarks and boundaries to describe protective action areas. The emergency information will be all-inclusive by including previously identified protective actions areas that are still valid as well as new areas. The State will demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. The State will demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals.

Risk and Host Jurisdictions Negotiated Extent of Play:
One simulated media briefing will be demonstrated. Each risk jurisdiction will establish a public inquiry phone line and will respond to calls. Some calls will be designed so as to allow public inquiry staff to demonstrate the capability to identify trends in rumors (e.g., frequently expressed false or misleading information). The public inquiry staff will demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate source. Information from the hotline staff, including information that correct false, or inaccurate information when trends are noted will be included as appropriate in emergency information

provided to the public, media briefings and/or media releases. Public inquiry 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 demonstration of reception on local EAS stations, however, continued monitoring will not be demonstrated.

All subsequent emergency information and instruction will be provided to the public and the media in a timely manner. All emergency information and instructions are consistent with PADs made by appropriate officials. The emergency information will contain all necessary and applicable instructions (e.g. evacuation instructions, evacuation routes, reception center locations, what to take when evacuating, information concern pets, shelter in place, information concerning protective action for schools and special populations, public inquiry telephone numbers, etc). The risk jurisdictions will demonstrate the capability to use familiar landmarks and boundaries to describe protective action areas. The emergency information will be all-inclusive by including previously identified protective actions areas that are still valid as well as new areas. The risk jurisdictions will demonstrate the capability to ensure that emergency information that is no longer valid is rescinded and not repeated by broadcast media. The risk jurisdictions will demonstrate the capability to ensure that current emergency information is repeated at pre-established intervals.

6. SUPPORT OPERATION/FACILITIES

6.a Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees

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

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

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

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

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

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

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

OOS – June 15-18, 2009:

EACs:

- New Kent County High School (New Kent County)
- L.P. Jackson Middle School (Surry County)
- Tabb High School (York County)
- Warwick High School (City of Newport News)
- Charles City County School Complex (Charles City County)
- Smithfield Middle School (Isle of Wight County)

Each activated EAC will be set-up according to established plans and procedures in a partial set-up to allow for exercise evaluation. However, the EACs will be staffed with adequate monitoring and decontamination personnel to allow exercise demonstration. All EAC personnel may be prepositioned and actual facility setup (signs, equipment, etc.) may be begun prior to the start of the evaluated demonstration. Each EAC will monitor and register six persons consecutively. For demonstration purposes, these six persons can be EWs or EAC personnel 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 will be simulated through interview. The decontamination of one person will be demonstrated through controller inject. Once the evacuees are monitored and found to be clean from contamination, sheltering staff will demonstrate the registration process.

Outstanding Issues:

None

6.b Monitoring and Decontamination of Emergency Worker Equipment

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

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

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

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

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

OOS – June 15-18, 2009:

EACs:

- New Kent County High School (New Kent County)
- L.P. Jackson Middle School (Surry County)
- Tabb High School (York County)
- Warwick High School (City of Newport News)
- Charles City County School Complex (Charles City County)
- Smithfield Middle School (Isle of Wight County)

Each activated EAC will be set-up according to established plans and procedures in a partial set-up to allow for exercise evaluation. However, the EACs will be staffed with adequate monitoring and decontamination personnel to allow exercise demonstration. All EAC personnel may be prepositioned and actual facility set-up (signs, equipment, etc.) may be begun prior to the start of the evaluated demonstration. The EWs and monitoring staff will demonstrate according to their plans and/or procedures the equipment tool drop and monitoring of used appropriate field

survey meters being returned from the field. A minimum of one vehicle will be monitored. The decontamination of one vehicle will be demonstrated through interview.

During vehicle monitoring, air filters will be monitored through interview. Appropriate equipment used for decontamination will be available.

Outstanding Issues:

62-07-1.e.1-A-08 - Charles City Co EAC - Vehicle Monitoring and Decontamination

The two Ludlum Model 2240I hand-held radiation monitoring instruments with Ludlum 44-9 pancake probes were beyond the expiration date for their calibration.

6.c Temporary Care of Evacuees

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

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

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

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

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

OOS – June 15-18, 2009:

EACs:

- New Kent County High School (New Kent County)
- L.P. Jackson Middle School (Surry County)
- Tabb High School (York County)
- Warwick High School (City of Newport News)
- Charles City County School Complex (Charles City County)
- Smithfield Middle School (Isle of Wight County)

This objective will be demonstrated by interview. For demonstration purposes 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 by an item and source list.

Outstanding Issues:

None

6.d Transportation and Treatment of Contaminated Injured Individuals

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

Extent of Play:
Monitoring, decontamination, and contamination control efforts will not delay urgent medical care for the victim. OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service for an extended time, any vehicle (e.g., car, truck, or van) may be utilized to transport the victim to the medical facility. Normal communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur before releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information. Monitoring of the victim may be performed before transport, while enroute or deferred to the medical facility. Before using a monitoring instrument, the monitor(s) should demonstrate the process of checking the instrument for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated before and during transport and at the receiving medical facility. The medical facility should demonstrate the capability to set-up and activate a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals. The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator. All activities associated with this criterion must be based on the ORO's plans and/or procedures and be completed as they would be in an actual emergency, unless noted above or otherwise indicated in the EOP agreement.

OOS – June 15, 2009:

- Surry County Volunteer Rescue Squad
- Virginia Commonwealth University Medical Center

Surry County Volunteer Rescue Squad personnel will be pre-positioned at SPS Training Center – Mock up Area and will be notified (controller inject) of a simulated injured/contaminated individual requiring transport to the hospital. Contamination levels will be provided to rescue squad personnel by controller inject. Rescue squad personnel will demonstrate appropriate contamination control measures before and during transport of the victim. Monitoring of the victim will be deferred to the medical facility. Communications between the ambulance/dispatcher and the receiving medical facility should be demonstrated. If a substitute

vehicle is used for transport to the medical facility, this communication must occur before releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

Virginia Commonwealth University Medical Center should demonstrate the capability to set-up and activate a radiological area for treatment of the victim. Equipment and supplies will be available for the treatment of the contaminated/injured patient. The medical center should demonstrate the capability to make decisions on the need for decontamination of the patient. Monitoring and decontamination of the patient will be in accordance with plans and procedures.

ATTACHMENT A

Surry Power Station 2009
Extent of Play Demonstration Tables

I. PLUME PHASE EXERCISE

A. Demonstration Date – August 4, 2009 (Daytime)

1) Commonwealth of Virginia Locations: Emergency Operations Center Mobilization in addition to the following:

EVALUATED FACILITY	LOCATION
Virginia Department of Emergency Management	Virginia Emergency Operations Center Richmond
Joint Information Center	Virginia Emergency Operations Center Richmond
Joint Public Information Center	Dominion Corporate Emergency Response Center, Innsbrook Technical Center
Public Inquiry Center	Dominion Corporate Emergency Response Center, Innsbrook Technical Center
Local Emergency Operations Facility	Virginia Department of Emergency Management State On-Scene Coordinator Virginia Department of Health – Radiological Health Division
State Field Monitoring Team 1	Surry Virginia Department of Transportation Residency Shop
State Field Monitoring Team 2	Pre-staged and deploy from the Surry Virginia Department of Transportation Residency Shop
Mobile laboratory	VD Virginia Department of Transportation OT Residency Shop – Route 10 Surry County

2) Risk Localities: Emergency Operations Center Mobilization, Back-up Route Alerting, Traffic/Access Control (via interview), and Field Team Monitoring

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

* In addition to Back-up Route Alerting for a failed siren, Route Alerting for Exception Areas located within 5-10 miles from Surry Power Station will be demonstrated.

3) Host Localities: Emergency Operations Center Mobilization

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

ATTACHMENT B

Previous Issues

LOCATION	ARCA/ISSUE NUMBER	FACILITY EVALUATED AND BRIEF DESCRIPTION
Commonwealth of Virginia	62-06-1.e.1-A-02	**Virginia FMT #1:** Were issued 0-20 R self reading dosimeters (SRD). During the pre-deployment briefing, the Staging Area Coordinator notified the team members that the administrative reporting level had been changed from 1.5 R to 150 mR (milliroentgen) and the turnback exposure level had been changed from 2.5 R to 250 mR. Using the SRDs issued to them, the team members could not distinguish the new levels with accuracy. The members of all the other FMTs participating in the exercise were issued electronic dosimeters which can distinguish the required levels.
Commonwealth of Virginia	62-07-4.a.3-A-02	**Virginia FMT B:** Did not demonstrate appropriate radiological monitoring techniques: The team did not monitor their survey instruments while in transit; the instruments were stored in the back of the truck and were not accessible. They also did not relocate to a low background area to count their air sample. The air sample head was disassembled and counted while still in the plume centerline.
Isle of Wight County	62-07-4.a.2-A-03	**Isle of Wight County:** RO did not provide field data to the DRH per the procedure which states that these readings are to be provided to the DRH FMT Coordinator via fax or telephone.
City of Williamsburg	62-07-4.a.3-A-06	**City of Williamsburg FMT:** Incorrectly used a pancake probe to measure ambient radiation.
Charles City County	62-07-1.e.1-A-08	**Charles City County EAC - Vehicle Monitoring and Decontamination:** The two Ludlum Model 2240I hand-held radiation monitoring instruments with Ludlum 44-9 pancake probes were beyond the expiration date for their calibration.
New Kent County	62-07-1.a.1-A-09	**New Kent County EOC:** A County school system representative did not respond to the EOC mobilization emails and page sent to New Kent County responders at 0930. A follow-up phone call to the School Board office, made at 1127, was unsuccessful. (A School Board representative was finally contacted at 1204 regarding the (simulated) opening of an EAC at the New Kent County High School).

APPENDIX 4:
Exercise Scenario

This appendix contains a summary of the simulated sequence of events used as the basis for invoking emergency response actions by Offsite Response Organization's (OROs) during the Surry Power Station (SPS) exercise on August 4, 2009.

The exercise scenario was submitted by the Commonwealth of Virginia. The scenario was approved by the Federal Emergency Management Agency (FEMA) Region III on June 11, 2009.

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.

Exercise Scenario Narrative Summary

An evaluated exercise is scheduled for conduct at the SPS. For purposes of the exercise, Unit 1 is designated as the affected unit.

Unit 1 is operating at 100% full power equilibrium at the middle of life.

Unit 2 is operating at 100% full power at the beginning of life.

The exercise starts at 0800. At 0804 a loose part alarm is received for the lower reactor vessel. Fuel damage occurs as a result of the loose part and the activity in the reactor coolant system (RCS) begins to increase as indicated by the letdown radiation monitor. The letdown monitor increases to the point satisfying conditions for declaration of an ALERT per Matrix FA1.1.

The supply breaker for 1H emergency bus trips open at 0910, resulting in the #1 emergency diesel generator starting and restoring power to the bus.

Main turbine vibration alarm is received in the control room simulator (CRS) at 0929 and decreasing condenser vacuum occurs as a result of a thrown blade in the Loose Parts turbine. In accordance with procedures the operators will attempt to manually trip the reactor which will be unsuccessful. The turbine will be tripped but the associated automatic reactor trip signal fails to trip the reactor as well. Eventually the reactor will be tripped locally by a field operator or automatically by an anticipated transient without scram (ATWS) signal depending when operator response actions are performed. The Shift Emergency Manager (SEM) should declare a Site Area Emergency (SAE) per Matrix SS2.1 due to the failure of the reactor to trip automatically and manually when required.

After the ATWS, the simulated activity and radiation levels increase more.

After the reactor trip the steam driven auxiliary feed water pump (1-FW-P-2) starts as required for current conditions but immediately trips on over speed. Loss of the condenser will require use of the steam generator pressure operated relief valves (PORV) for unit cool down.

Charging pump 1-CH-P-1C trips at 1018 automatically isolating letdown. The standby pump will start as expected restoring charging and seal injection to the reactor coolant pumps.

At 1044 a (steam generator) LPs alarm is received in the CRS resulting in a steam generator tube rupture in the "B" steam generator. Steam generator safety valve (1-MS-SV-101B) fails open shortly after the tube rupture resulting in a release path for radioactive material to the environment. Safety injection will actuate in approximately one to two minutes after the safety valve opens.

The steam generator tube rupture, in conjunction with the fuel failure, loss of secondary integrity and safety injection establishes conditions for declaration of a General Emergency (GE) per Matrix FG1.1. A protective action recommendation (PAR) will be developed (default PAR per EPIP-1.06), and State, local governments (EPIP-2.01) and the Nuclear Regulatory Commission (NRC) (EPIP-2.02) will be notified. Determine potential radiological consequences. The affected sectors are "K, L and M". The wind direction is from approximately 45 degrees. Wind speed 8 mph.

Offsite activity and radiation levels increase. Field Monitoring Teams (FMTs) are deployed to determine the offsite radiation levels.

At 1130, measured offsite activity levels will dramatically increase requiring an expanded PAR. Expanded PAR C per EPIP 1.06: Actual or projected doses beyond 2 miles either >1.0 Rem total effective dose equivalent (TEDE) or >5.0 Rem Thyroid committed dose equivalent (CDE), (recommendation for state to consider KI and evacuate all sectors 0-5 miles and downwind sectors (K, L, M) 5-10 miles)

When exercise demonstration requirements have been fulfilled, the "B" Steam Generator safety valve will be closed or allowed to be closed based on actions stopping the release of radioactive material to the environment and the exercise will be terminated shortly afterwards. This is expected to occur between 1230 and 1300.

The escalation through the applicable emergency classifications provides activities designed to exercise both onsite and offsite response organizations. Sufficient time is permitted to allow the response organizations to perform the required assessments and response actions.

Lead facilitators will conduct facility critiques following exercise termination.

APPENDIX 5:
Planning Issues

This appendix contains the Planning Issues assessed during the August 4, 2009, exercise at Surry Power Station (SPS). Planning Issues are issues identified in an exercise or drill that do not involve participant performance, but rather involve inadequacies in the plan or procedures. Planning Issues are required to be corrected through the revision and update of the appropriate State and local radiological emergency response plans (RERPs) and/or procedures in accordance with the following schedule:

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

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

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

2.2.1 James City County EOC

Issue Number: 62-09-5.a.3-P-01

Condition: Back-up route alerting procedures for James City County Siren #61 are not included within the James City County RERP, Appendix 4, "Law Enforcement Procedure." Specifically, back-up route alerting guidance does not appear in Attachment 5, "Back-up Route Alerting Descriptions" or Attachment 6, "Back-up Route Alerting Maps".

Possible Cause: Siren #61 is a new siren and is not included within the James City County RERP.

References: NUREG-0654, E.6;
James City County RERP, Appendix 4
"Law Enforcement Procedure";
James City County RERP, Attachment 5
"Back-up Route Alerting Descriptions";
James City County RERP, Attachment 6
"Back-up Route Alerting Maps".

Effect: The public located in the vicinity of the James City County Siren #61 would not have been alerted to an emergency at the SPS in a timely manner.

Recommendation: Develop a back-up route alerting procedure and route map, for the siren coverage area of James City County Siren #61 and make it part of the County plan.

Commonwealth Response: Agree. The James City County RERP is under revision and will be submitted 60 days prior to the 2011 Surry Power Station Biennial Exercise.

2.4.2 Williamsburg School District

Issue Number: 62-09-3.c.2-P-02

Condition: Emergency planning for schools within the City of Williamsburg, as written in the City of Williamsburg RERP, James City County/Williamsburg School System Procedure, is not sufficiently detailed to assure that actual decisions are implemented in a timely manner.

Possible Cause: Emergency planning and the development of implementing procedures are not complete for school notifications and evacuations. There is no one specific and designated individual who can order the evacuation. This order can be made by the County, the City, or by the Transportation Office within the Public School Department, as well as the Public School Department. Additionally, specific evacuation procedures are not included in the City of Williamsburg or school plans. The actual notification procedure is then subject to an informal role call notification of schools by staff members.

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

Effect: Evacuation decisions may not be made in a timely manner.

Recommendation: Plans should be updated to designate specific individuals who may authorize an evacuation order. In addition, the plan should include written procedures for notification and evacuation.

Commonwealth Response: Agree. The Williamsburg and James City County RERPs are under revision and will be submitted to 60 days prior to the 2011 Surry Power Station Biennial Exercise.

2.4.2 Williamsburg School District

Issue Number: 62-09-3.c.2-P-03

Condition: Emergency planning for schools operating National Parks and Recreation programs is not included in the appropriate response plans. During the summer months, schools are populated by National Parks and Recreation programs as well as normal summer school. The participants in these programs, along with their parents, are not provided the same level of information regarding protective actions, including possible evacuation to a host school, as is provided to parents of students during the school year. Additionally, information as to what schools have active programs is not available in all of the locations in which an evacuation order can be issued.

Possible Cause: Protective actions for the students of Parks and Recreation Programs were not considered during emergency planning.

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

Effect: Information regarding protective actions for attendees in National Parks and Recreation programs and summer schools is not provided to parents. Officials who may initiate protective actions may not be fully aware of all of the schools which have ongoing National Parks and Recreation programs.

Recommendation: Include the National Parks and Recreation programs in emergency planning process, and provide the notification implementing procedures in the appropriate plans.

Commonwealth Response: Agree. Williamsburg School District personnel will include the National Parks and Recreation Programs in the emergency planning process and revise procedures as necessary. Revised procedures will be submitted 60 days prior to the 2011 Surry Power Station Biennial Exercise.