Exercise Report

Pilgrim Nuclear Power Station

Licensee: **Entergy Nuclear Northeast**

Exercise Date: **April 14, 2004**

Report Date: **July 14, 2004**

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION I
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Boston, Massachusetts 02110

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I. EXECUTIVE SUMMARY

On April 14, 2004, an exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Pilgrim Nuclear Power Station (PNPS) by the Federal Emergency Management Agency (FEMA), Region I. The purpose of the exercise was to assess the level of State and local preparedness in responding to a radiological emergency. This exercise was held in accordance with FEMA's policies and guidance concerning the exercise of State and local Radiological Emergency Response Plans (RERPs) and procedures. The most recent exercise at this site was conducted on May 22, 2002. The qualifying emergency preparedness exercise was conducted on March 3, 1982.

FEMA wishes to acknowledge the efforts of the many individuals in the Commonwealth of Massachusetts, the Massachusetts risk jurisdictions of Carver, Duxbury, Kingston, Marshfield, and Plymouth, and the Massachusetts support jurisdictions of Bridgewater, Taunton, and Braintree who participated in this exercise. The various agencies, organizations, and units of government from these State and local jurisdictions who participated in this exercise are listed in Section III.B of this report.

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 by all participants were evident during this exercise.

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

- Carver schools, April 15, 2004
- Duxbury schools and day care centers, April 15, 2004
- Kingston schools, day care centers, and special facilities, April 15, 2004
- Marshfield school, April 15, 2004
- Plymouth schools, day care centers, and special facilities, April 15, 2004
- Braintree Reception Center, May 1, 2004
- Milton KI Dispensing Sites (2), May 1, 2004
- Caritas Good Samaritan Medical Center, February 25, 2004
- American Medical Rescue, February 25, 2004

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. As a result of this exercise, there was one Deficiency identified and four Areas Requiring Corrective Action (ARCAs). Four previous ARCAs were resolved and no previous ARCAs remain unresolved. The identified Deficiency was corrected on June 14, 2004, prior to the 120 day requirement.

II. INTRODUCTION

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

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

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

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

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

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

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

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

Representatives of these agencies serve on the FEMA Region I Regional Assistance Committee (RAC) that is chaired by FEMA.

Formal submission of the RERPs for the PNPS to FEMA Region I by the Commonwealth of Massachusetts and involved local jurisdictions occurred on June 16, 1981. The Commonwealth of Massachusetts annually reviews and, if necessary, revises these plans and procedures.

A REP exercise was conducted on April 14, 2004, by FEMA Region I to assess the capabilities of State and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the PNPS. The purpose of this exercise report is to present the exercise results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

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

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

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

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

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

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

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

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

III. EXERCISE OVERVIEW

Contained in this section are data and basic information relevant to the April 14, 2004, exercise to test the offsite emergency response capabilities in the area surrounding PNPS. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

A. PLUME EMERGENCY PLANNING ZONE DESCRIPTION

The PNPS is located in the Commonwealth of Massachusetts in eastern Plymouth County on the shore of Cape Cod Bay. The towns of Plymouth, Kingston, and Duxbury, and portions of Marshfield and Carver are included in the approximate 10-mile radius plume exposure pathway EPZ. The topography of the 10-mile EPZ is a relatively flat coastal plain area. Portions of Massachusetts and a part of Rhode Island fall within the 50-mile radius ingestion exposure pathway.

The 10-mile EPZ contains a resident population of approximately 84,533 based on the Massachusetts RERP, revised December 2003. Summer-time transient populations and seasonal residents increase this number by approximately 33,102. In addition, an estimated 16,246 persons come into the EPZ to work.

The land use within the EPZ is mixed residential, commercial, and agricultural. The chief agricultural product in the area is cranberries. There is one commercially operated dairy farm located approximately eight miles north of PNPS. There are also dairy animals on the Plymouth county farm located on the grounds of the House of Corrections and Jail about five miles west of PNPS.

The coastal area, extending north from the Plymouth-Bourne Town Line to Marshfield, is a popular summer tourist attraction. In addition to the beaches, the town of Plymouth draws significant numbers of visitors to its many historic sites. There are many ponds and streams and cranberry bogs in the area west of the coast. This area also is home to Myles Standish State Forest, a major recreational facility.

The major north-south highway transportation routes through the area are Route 58 in Carver, Route 3A along the coast, and Route 3, which serves as the primary road servicing the Cape Cod area from the north. Major east-west routes in the area are Route 139 in Marshfield, Route 14 in Duxbury, Routes 106 and 27 in Kingston, and Route 44 in Plymouth. The 10-mile EPZ also includes Plymouth Harbor and Cape Cod Bay, which have boating traffic. Other transportation facilities within the EPZ include the Massachusetts Bay Transportation Authority (MBTA) Commuter Rail.

The 10-mile EPZ has been divided into 12 subareas so that protective actions may be taken in specific parts of the EPZ. The 12 subareas have been defined using easily recognized boundaries for issuing protective action directives to the public.

B. EXERCISE PARTICIPANTS

The following agencies, organizations, and units of government participated in the PNPS exercise on April 14, 2004, and the referenced out-of-sequence demonstrations.

COMMONWEALTH OF MASSACHUSETTS

State Emergency Operations Center

Massachusetts Emergency Management Agency (MEMA)
Massachusetts Secretary of State's Office
Massachusetts Department of Public Health (MDPH)
Massachusetts State Police
Massachusetts Highway Department
Massachusetts National Guard
Massachusetts Department of Mental Health
Massachusetts Emergency Animal Response Team
American Red Cross
Entergy Nuclear
Federal Emergency Management Agency
U.S. Coast Guard

Region II Emergency Operations Center

MEMA
Department of Corrections
Plymouth County C-Med
RACES
Massachusetts Bay Transit Authority
Massachusetts State Police
Massachusetts National Guard
Massachusetts Highway Department
American Red Cross
Plymouth County Sheriff's EMA
Entergy Nuclear

Emergency Operations Facility

MEMA
MDPH
Entergy Nuclear

Radiological Field Monitoring and Sampling Teams
MDPH, Radiation Control Program

Media Center
MEMA
Entergy Nuclear Northeast Pilgrim Station

Massachusetts State Police
Massachusetts State Police Troop D

RISK JURISDICTIONS

Carver
Board of Selectmen
Emergency Management
Police Department
Fire Department
Council on Aging
School District
Emergency Medical Services
Entergy Nuclear

Duxbury
Police Department
Fire Department
Department of Public Works
School Department
Town Selectman
Town Health Department
Emergency Management
Entergy Nuclear

Kingston
Police Department
Fire Department
School Department
Health Department
Streets, Trees, and Parks Department
Emergency Management Agency
Radio Amateur Emergency Services (RACES)
Selectmen
Entergy Nuclear

Marshfield

Board of Selectmen (Town Administrator)
Emergency Management Agency
Police Department
Fire Department
Public Works Department
School Department
Harbormaster
Emergency Medical Services
Entergy Nuclear
RACES

Plymouth

Selectmen (Vice-Chair)
Emergency Management
RACES Operator
Harbormaster Representative
Entergy Nuclear
Police Department
School Department
Health Department
Fire Department
Public Works

SCHOOLS, DAY CARE CENTERS, AND SPECIAL FACILITIES

Carver

Schools
Carver Elementary School
Carver High School

Duxbury

Schools
Alden Elementary School
Chandler Elementary School
Duxbury High School
Duxbury Middle School

Day Care Centers
Bayfarm Montessori Academy
Discovery Corner Day Care
Noah's Ark Day Care
Pied Piper Preschool
South Shore Conservatory Preschool

Kingston

School
Kingston Elementary School

Day Care Center
South Shore Head Start and Child Care at Kingston

Special Facilities
Elizabeth Ann Rest Home
Provincial Residence

Marshfield

School
Governor Edward Winslow School

Plymouth

Schools
Cold Springs Elementary School
Federal Furnace Elementary School
Nathaniel Morton Elementary School
Plymouth Community Intermediate School
Plymouth West Elementary School

Day Care Centers
Cranberry Country Day School
Methodist Nursery School
Pilgrim Academy
Ponds Child Care Center
Rising Tide Charter School
South Shore Head Start

Special Facilities
Cozy Corner Adult Day Care
High Point
Mayflower Nursing Home
Plymouth Crossings Assisted Living

SUPPORT JURISDICTIONS

Braintree Command Center

American Red Cross
School Department
Health Department
RACES
Volunteers

Braintree Reception Center (Braintree High School)

Braintree Emergency Management Agency
Weymouth Emergency Management Agency
Volunteers
RACES

Transportation Staging Area

Braintree Emergency Management Agency
Weymouth Emergency Management Agency

KI Distribution Sites

Milton Police Department
Milton Fire Department
Milton Auxiliary Fire Department
MDPH

Bridgewater Emergency Operations Center

Emergency Management Agency
Board of Selectmen
Fire Department
Police Department
School District
Board of Health
Highway Department
Transportation Department
Bridgewater State College
American Red Cross

Taunton Emergency Operations Center

Mayor's Office
Emergency Management Agency
Police Department
Department of Public Works
Water Department
School Department
Parks and Recreation Department
Board of Health
Department of Veteran's Services
American Red Cross
RACES Amateur Radio
Volunteers

Caritas Good Samaritan Medical Center

American Medical Response

C. EXERCISE TIMELINE

Table 1, on the following pages, presents the time at which key events and activities occurred during the PNPS plume exposure pathway portion of the exercise on April 14, 2004. Also included are the times notifications were made to the participating jurisdictions/functional entities.

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station (Plume Phase)

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action was Taken									
		State EOC	EOF	Area II	Media Center	MSP Troop D	Carver	Duxbury	Kingston	Marshfield	Plymouth
Unusual Event	N/A	N/A	N/A	N/A		N/A	N/A			N/A	N/A
Alert	0815	0830	N/A	0830	0824	0830	0826	0826	0833	0829	0831
Site Area Emergency	0932	0947	0932	0945	0933	0933	0944	0946	0944	0950	0947
General Emergency	1148	1201	1148	1206	1149	1150	1200	1203	1206	1204	1207
Simulated Radiation Release Started	1145	1201	1148	1206	1149	1150	1200	1203	1206	1204	1207
Simulated Radiation Release Terminated	N/A										
Facility Declared Operational		0950	0902	0855	0928	N/A	0900	0855	0913	0900	0905
Declaration of State of Disaster Emergency		0953	1015	0954	1002	1000	0953	1026	1016	1017	1013
Exercise Terminated		1311	1311	1318	1314	1320	1308	1305	1330	1330	1253
Early Precautionary Actions: Scusset Beach, Gurnett Pt., Clarks Island cleared											0930
Precautionary school transfer; closed beaches; animals on stored feed; halted air/rail/ocean traffic		1014	1030	1014	1037	1013	1037	1019	1024	1023	1024
1st Siren Activation		1024					1024	1024	1024	1024	1024
1st EAS		1027									
1st Protective Action Decision		1218									
2nd Siren Activation		1228					1228	1228	1228	1231	1228
2nd EAS		1231									
2nd Protective Action Decision											
KI Administration Decision		1206	1148* 1152	1206		1245	1232	1231	1234	1234	1233

LEGEND: NA – Not Applicable

* MDPH emergency worker KI

TABLE 1. EXERCISE TIMELINE

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station (Plume Phase)

Emergency Classification Level or Event	Time Utility Declared	Time That Notification Was Received or Action was Taken									
		Bridge-water	Taunton	Braintree							
Unusual Event	N/A										
Alert	0815	0828	0831	0826							
Site Area Emergency	0932	0945	1000	0944							
General Emergency	1148	1200	1210	1201							
Simulated Radiation Release	1145	1200	1207	1201							
Simulated Radiation Release Terminated	N/A										
Facility Declared Operational		0850	0925	0952							
Declaration of State of Disaster Emergency		1010	1010	1031							
Exercise Terminated		1320	1330	1330							
Early Precautionary Actions: Scusset Beach, Gurnett Pt., Clarks Island cleared											
Precautionary school transfer; closed beaches; animals on stored feed											

LEGEND: NA – Not Applicable

IV. EXERCISE EVALUATION AND RESULTS

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the April 14, 2004, plume exposure pathway exercise with Massachusetts and the other out-of-sequence demonstrations to test the offsite emergency response capabilities of State and local governments in the 10-mile EPZ surrounding PNPS.

Each jurisdiction and functional entity was evaluated on the basis of its demonstration of criteria contained in the "Radiological Emergency Preparedness: Exercise Evaluation Methodology," published in the *Federal Register* Notice on September 12, 2001, as amended April 25, 2002. Detailed information on the exercise criteria and the extent-of-play 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 all exercise criteria from the *Federal Register* Notice that were scheduled for demonstration during this exercise by all participating jurisdictions and functional entities. Exercise criteria are listed by number and the demonstration status of those criteria is indicated by the use of the following letters:

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

D – Deficiency assessed

A – ARCA(s) assessed

U – Unresolved ARCA(s) from prior exercises

N – Not Demonstrated (Reason explained in Section IV.B)

02 – Year Demonstrated

TABLE 2. 2004 EXERCISE EVALUATION GRID

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
1.0 COMMONWEALTH OF MASSACHUSETTS	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
State EOC	M	'02	M	M	M	M	M	M	M							M	M									A			M				
Region II EOC	M	'02	M	M	M							M	A	M	M																		
EOF	M	'02	M	M	M		M						M									M											
Field Monitoring Team A	M			M	M							M	M								M		M										
Field Monitoring Team B	M			M	M							M	M								M		M										
Joint Media Center	M	'02	M	M	M							M																	M				
Massachusetts State Police	M	'02	M	M	M							M	D*			M	M																
Myles Standish State Forest		'02																															
Massachusetts Correctional Institution (MCI) Plymouth		'02																															
2.0 RISK JURISDICTIONS	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
Carver EOC	M	'02	M	M	M	M						M	M	M	M	M	M									M		M	M				
Duxbury EOC	M	'02	M	M	M	M		M				M	M	M	M	M	M									M		M	M				
Kingston EOC	M	A	M	M	M	M						M	M	M	M	M	M									M		M	M				
Marshfield EOC	M	'02	M	M	M	M						M	M	M	M	M	M									M		M	M				
Plymouth EOC	M	'02	M	M	M	M						M	M	M	M	M	M									M		M	M				
Schools, Day Care Centers, Special Facilities																																	
Carver	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
SCHOOLS:																																	
Carver Elementary School				M	M										M																		
Carver High School				M	M										M																		
Carver Middle School																																	
Governor John Carver Primary (K-2)																																	
DAY CARES:																																	
Captain Pal Day Care Center					'02										'02																		
Cranberry Crossing Day Care Center					'02										'02																		
Kids Count Day Care Center					'02										'02																		
Kidstop Day Care Center					'02										'02																		
Old Colony Y Day Care Center																																	

TABLE 2. 2004 EXERCISE EVALUATION GRID

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
Duxbury	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
SCHOOLS:																																	
Alden Elementary School *				M	M								M		M																		
Chandler Elementary School *				M	M								M		M																		
Duxbury Bay Maritime Academy																																	
Duxbury High School *				M	M								M		M																		
Duxbury Middle School *				M	M								M		M																		
DAY CARES:																																	
After School Club																																	
Bay Farm Montessori Academy *				M	M								M		M																		
Berrybrook School																																	
Breakfast Club @ Chandler																																	
Discovery Corner Day Care *				M	M								M		M																		
Good Shepard Christian Academy																																	
Junior Club @ Chandler																																	
KED-Kindergarten																																	
Learn 'n' Play Preschool					'02										'02																		
Magic Dragon Children's Center																																	
Noah's Ark Daycare *				M	M								M		M																		
Pied Piper Preschool *				M	M								M		M																		
Pilgrim Area Collaborative																																	
Pilgrim Day Child Care & Preschool					'02										'02																		
South Shore Conservatory Preschool *				M	M								M		M																		
The Breakfast Club																																	
SPECIAL FACILITIES:																																	
Baypath at Duxbury/Duxbury House																																	
Cedar Hill Conference Center																																	
North Hill Group Home (Westbrook)																																	

TABLE 2. 2004 EXERCISE EVALUATION GRID

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
Kingston	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
SCHOOLS:																																	
Fellowship Christian Academy																																	
Kingston Elementary School *				M	M								M		M																		
Kingston Intermediate School					'02										'02																		
Old Colony Child Care Services																																	
Old Colony Child Care Services (Intermediate)																																	
Pilgrim Area Collaborative (Elementary)																																	
Pilgrim Area Collaborative (Intermediate)																																	
Sacred Heart Elementary School					'02										'02																		
Sacred Heart High School *																																	
Silver Lake High School																																	
Silver Lake Integrated Preschool																																	
DAY CARES:																																	
Children's Center at Evanswood					'02										'02																		
Children's Center at Silver Lake																																	
First Friends Daycare																																	
Growth Unlimited					'02										'02																		
Little People's Country Day Care																																	
South Shore Head Start and Child Care at Kingston *				M	M								M		M																		
The Children's Workshop																																	
SPECIAL FACILITIES:																																	
Adult Day Care at Silver Lake																																	
Bethesda at Evanswood					'02									'02																			
Elizabeth Ann Rest Home				M	M									M																			
Evanswood Adult Care					'02									'02																			
Inn at Silver Lake																																	
Jones River Guest House																																	
Meadowcrest																																	
Provincial Residence *				M	M									M																			
Silver Lake Homes																																	
Skilled Care Center at Silver Lake																																	

TABLE 2. 2004 EXERCISE EVALUATION GRID

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
Marshfield	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
SCHOOLS:																																	
Governor Winslow School *				M	M								M		M																		
DAY CARES: none																																	
SPECIAL FACILITIES: none																																	
Plymouth	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
SCHOOLS:																																	
Cold Springs Elementary School *					M								M		M																		
Federal Furnace Elementary School *					M								M		M																		
Hedge Elementary School																																	
Indian Brook Elementary School					'02										'02																		
Manomet Elementary School					'02										'02																		
Mt. Pleasant Elementary School																																	
Nathaniel Morton Elementary School *					M								M		M																		
New Testament School (private school)					'02										'02																		
Oak Street School																																	
Plymouth Community Intermediate School *					M								M		M																		
Plymouth North High School																																	
Plymouth South High School					'02										'02																		
Plymouth South Middle School					'02										'02																		
Plymouth West Elementary School *					M								M		M																		
South Elementary School					'02										'02																		
DAY CARES:																																	
Bright Beginnings Day Care					'02										'02																		
Children's Creative Learning Center																																	
Cranberry Country Day School					M								M		M																		
Garden of Knowledge																																	
Kidsport Day Care					'02										'02																		
Kinder Kollege, Inc.																																	
Little Bears Play School																																	
Little Red School House																																	
Methodist Nursery School					M										M																		
Rising Tide Charter School					M								M		M																		

TABLE 2. 2004 EXERCISE EVALUATION GRID

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
Plymouth (day cares – continued)	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
Pilgrim Academy *					M								M		M																		
Pinewood School																																	
Ponds Child Care Center *					M								M		M																		
Room 2 Grow																																	
South Shore Head Start *					M								M		M																		
Super Kids Day Care					'02										'02																		
Tiny Town Child Care																																	
Woodside School					'02										'02																		
SPECIAL FACILITIES:																																	
Baird Center					'02									'02																			
Beverly Manor Nursing Home																																	
Chilton House Rest Home																																	
Cozy Corner Adult Day Care *					M								M	M																			
Habilitation Assistance																																	
High Point					M									M																			
Life Care Center of Plymouth					'02									'02																			
Mayflower Nursing Home *					M								M	M																			
Marriott Maple Ridge					'02									'02																			
McLean Hospital																																	
Newfield House					'02									'02																			
Plymouth Crossings Assisted Living *					M								M	M																			
Sunrise Assisted Living of Plymouth																																	
Teamworks																																	

Met – M
ARCA – A
Deficiency – D
Deficiency Corrected 6/14/04 – D*
Year Demonstrated – 02

TABLE 2. 2004 EXERCISE EVALUATION GRID

DATE AND SITE: April 14, 2004, Pilgrim Nuclear Power Station

OFFSITE RESPONSE ORGANIZATION	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING						PROTECTIVE ACTION IMPLEMENTATION									FIELD MEASUREMENT & ANALYSIS					EMERG NOTIF & PUBLIC INFO				SUPPORT OPERATION/ FACILITIES			
3.0 SUPPORT JURISDICTIONS	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
Braintree Command Center	M	'02	M	M	M									M		M	M												M				
Braintree Reception Center (Braintree HS)													M			M														2A	M		
Braintree Transportation Staging Area				M	M							M		M																			
Milton KI Dispensing Sites (2)		M		M	M								M			M																	
Bridgewater EOC	M	'02	M	M	M									M		M	M												M				
Bridgewater Reception Center																																	
Taunton EOC	M	'02	M	M	M									M		M	M												M				
Taunton Reception Center		'02	'02	'02	'02																									'02			
Taunton Transportation Staging Area		'02	'02	'02	'02							'02		'02																			
Scussett Beach Transportation Staging Area	02	02	02	02	02							02		02																			
Caritas Good Samaritan Medical Center																																	M
American Medical Response Ambulance Company																																	M
Quincy Medical Center																																	02

Met – M
ARCA – A
Deficiency – D
Year Demonstrated – 02

B. STATUS OF JURISDICTIONS EVALUATION

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

- **Met** – Listing of the demonstrated exercise 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 criteria under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency, recommended corrective actions, and the corrective action demonstrated if the Deficiency was redemonstrated during the exercise.

- **Area Requiring Corrective Action** – Listing of the demonstrated exercise criteria under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise. The corrective action demonstrated if the ARCA was redemonstrated during the exercise is also included.

- **Not Demonstrated** – Listing of the exercise criteria that were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.

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

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

The following are definitions of the two types of exercise issues 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 off-site emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the

event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

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

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

The identifying 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.

- **Criterion Number** – An alphanumeric number corresponding to the criterion numbers as contained in the *Federal Register* Notice dated September 12, 2001, as amended April 25, 2002.

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

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

1. COMMONWEALTH OF MASSACHUSETTS

1.1 State Emergency Operations Center

The State Emergency Operations Center (EOC) was well supported by the Massachusetts Emergency Management Agency (MEMA) staff and the other agencies that responded to support EOC operations. Briefings were conducted on a regular basis to keep the EOC staff apprised of ongoing conditions and potential developments allowing for a forward looking approach to the problem. The Emergency Management Director conducted Senior Advisory Group meetings in the training room of the EOC to obtain input from those advisors on both precautionary and protective actions. The Senior Advisory Group provided input in briefings to the Director that allowed for timely decision making. Implementing procedures were clear and detailed. The EOC was well prepared and well managed.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
2 – a.1, b.1, b.2, c.1
3 – d.1, d.2
5 – b.1

b. **DEFICIENCIES:** None

c. **AREAS REQUIRING CORRECTIVE ACTION:** 5.a.1

Issue No.: 48-04-5.a.1-A-01

Condition: Emergency Alert System (EAS) message #2 exceeded the 90 second limit the system allows. The message took two minutes, 30 seconds (150 seconds) to read and included information not required by FEMA guidance.

Possible Cause: The EAS messages in the implementing procedures are pre-scripted, but, the scripts require the PAO staff to select the appropriate language from several possibilities. The implementing procedure does not mention restricting the message length (time) to last no longer than 90 seconds. The editing process did not take the message length/time into consideration and the multiple choice structure of the pre-scripted messages caused too much information and duplications to be included.

Reference: NUREG-0654 E.7. J. 10. e., f.

Effect: All the information contained in the EAS message would not have been broadcast. The public may not receive the required information.

Recommendation: EAS messages should be written to provide only the information required by the FEMA EAS guidance: Identification of the authority

(e.g., governor or mayor) issuing the emergency message; identification of the Plant and Emergency Classification Level; call attention to brochures or calendars; and, a closing statement to stay tuned for additional information. The PAO staff should be trained to keep the length of the EAS messages to 90 seconds.

Schedule of Corrective Action: EAS messages will be revised to meet the 90-second requirement and will provide information as outlined in the FEMA Guidance.

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED:

Issue No.: 48-02-1.e.1-A-01

Issue for Criterion: 1.e.1 – Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations**.**

Condition: News Release Number 2 (hard copy) informing the Media Center, Region II, and EOCs of the decision to recommend that farm animals be sheltered and put on stored feed and water was not received due to multiple equipment failures with the fax machines.

Possible Cause: Two outgoing facsimile machines in the Public Affairs Office, as well as two local EOC and Region II machines, failed to operate properly during the exercise. This resulted in News Release 2 not being received on the broadcast fax. An alternate facsimile machine was used to complete sending out the messages, however, the system does not provide the sender with confirmation that all addressees were contacted or that what is sent out is what is actually received by the addressees.

Reference: NUREG-0654, H.7, 10; J.10.a, b, e; J.11; K.3.a

Effect: Failure of fax transmission containing precautionary actions may lead to those actions not being initiated and completed in a timely manner.

Recommendation: Facsimiles are prone to malfunctions. Utilize faxes and/or verbal transmission as a backup. Change to an e-mail system which can: (1) provide confirmation of receipt of messages, (2) verify that the message text sent was what was received by the addressee, and (3) hold messages in a mailbox for addressees to access at anytime.

Corrective Action Demonstrated: The Public Affairs Office now has two new facsimile machines (model Muratec F320). Both machines were used during the exercise and operated properly. As part of the faxing system the Public Affairs

Office utilizes an internet based faxing program operated by MCI. The fax machines send their faxes to an MCI server which is programmed to simultaneously send the faxes to pre-selected addressees. The PAO staff can then receive a report via internet which identifies the recipients of the fax and if any of the addressees failed to receive the fax. This serves as a ready backup to the PAO staff's usual procedure of calling each addressee to confirm receipt.

f. PRIOR ARCAs – UNRESOLVED: None

1.2 Region II Emergency Operations Center

The MEMA Region II EOC personnel functioned well, with refined and comprehensive procedures, under the leadership of the Region II Director. Especially noteworthy was the Transportation Officer and his staff. Their efforts in obtaining accurate and timely information aided the entire response organizations in meeting requested transportation requirements. The Communication Coordinator also displayed excellent leadership throughout the demonstration by training several new communications system operators. He also resolved problems with RACES and communities that could not establish contact. He was also aware of his responsibility to get important information to the Region II Director.

a. MET: Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
3 – a.1, c.1, c.2

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: 3.b.1

Issue No.: 48-04-3.b.1.-A-02

Issue for Criterion: 3.b.1 – KI and appropriate instructions are made available should a decision to recommend use of KI be made. Appropriate record keeping of the administration of KI for emergency workers and institutionalized individuals (not the general public) is maintained.

Condition: The Assistant Radiological Officer (RO) in the Region II EOC did not notify all of the State Dosimetry Coordinators of the decision for emergency workers to ingest KI.

Possible Cause: The procedures for the Assistant RO do not clearly identify all the State Dosimetry Coordinators to notify of decisions concerning KI.

Reference: MEMA Region II Plan and procedures, AII-03

Effect: Although the State Police Troop D Commander was notified that State Police Troopers at the ACP/TCPs should ingest KI, his procedures do not state he should notify

the troopers on post of that decision. The notification should have come from the State Police Dosimetry Coordinator, who should have been notified by the Region II Assistant RO.

Recommendation: Review the plan and procedures and correct or include all State agencies that require notification. Then conduct a follow up training to ensure that the changes are clear and can be implemented.

Schedule of Corrective Action:

1. The Assistant Radiological Officer procedure will be revised to clarify the state agencies to be contacted.
2. Training will be conducted to ensure proper notification is made.

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: 1.c.1

Issue No.: 48-02-1.c.1-A-03

Issue for Criterion: 1.c.1 – Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.

Condition: The Massachusetts State Police (MSP) Troop D MEMA Region II EOC representative did not keep the MSP Troop Commander updated with timely information. This information included the Governor's State of Emergency Declaration and the first siren soundings.

Possible Cause: Procedures, which require the Shift Commander be briefed, were not followed.

Reference: MEMA Region II Plan and IP A11-01S

Effect: The Shift Commander was not aware of important information in a timely manner.

Recommendation: Additional training in following respective implementing procedures to keep individuals in the chain of command informed of all pertinent information.

Corrective Action Demonstrated: The Region II EOC State Police representative was in continual telephone contact with the Shift Commander of Troop D throughout the demonstration, i.e., at each ECL change and any significant event.

f. PRIOR ARCAs – UNRESOLVED: None

1.3 Emergency Operations Facility

At the Emergency Operations Facility (EOF), coordination of information between MEMA, MDPH, and utility personnel was very good, especially in the area of dose assessment and field monitoring. All Commonwealth responders were very knowledgeable of their procedural requirements and quickly responded to changing conditions. Communication between the EOF and State Emergency Operations Center was excellent.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
2 – b.1
3 – b.1
4 – a.2

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR DEFICIENCY – RESOLVED:** 4.a.2

Issue No.: 48-02-4.a.2-D-02

Issue for Criterion: 4.a.2 – Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure.

Condition: The field monitoring teams were unaware that a health order had been issued at 1230 advising all emergency workers to take KI.

Possible Cause: The Field Team Coordinator did not pass this order to the field monitoring teams.

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

Effect: The failure to advise the field monitoring teams to take KI could result in a significant uptake of radioiodine to the thyroid.

Recommendation: Assure that procedures are in place to keep the field monitoring teams aware of all radiological conditions, including any order advising emergency workers to take KI.

Corrective Action Demonstrated: At the September 23, 2002, Seabrook Nuclear Power Station drill, the Massachusetts Field Team Coordinator at the EOF, successfully communicated with the two State Field Monitoring Teams to inform them of the General

Emergency declaration, a radiological release in progress and the need to take potassium iodide (KI).

f. PRIOR ARCAs – UNRESOLVED: None

1.4 Radiological Field Teams

1.4.1 Field Monitoring Team A

Field Monitoring Team A (NIAT # 16/17) of the Nuclear Incident Advisory Team (NIAT) was well versed in the NIAT procedures. They were able to quickly locate their assigned sampling locations, promptly obtain the required data and call it in to the Field Team Coordinator at the EOF. During the entire course of the exercise they exhibited excellent contamination control procedures.

a. MET: Evaluation Area Criterion 1 – a.1, d.1, e.1
3 – a.1, b.1
4 – a.1, 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

1.4.2 Field Monitoring Team B

Both members of Field Monitoring Team B (NIAT #14) of NIAT were experienced field team members who were familiar with their equipment and procedures. They performed their assigned duties with a thoughtful application of their health physics knowledge to the monitoring tasks assigned to them.

a. MET: Evaluation Area Criterion 1 – a.1, d.1, e.1
3 – a.1, b.1
4 – a.1, 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

1.5 Media Center

The Joint Media Center (JMC) was staffed and organized in an outstanding manner. Personnel were obviously well trained and experienced. Four media briefings were effectively conducted. These sessions were transmitted over speakers, into all JMC work areas, which facilitated effective JMC-wide communication of all news information. The utility staff coordinated continuously with State and Town public information personnel, to assure complete and accurate information for the media. The media monitoring work area had a radio; four televisions, tuned to the major networks and cable; and computers for monitoring the Internet.

a. MET: Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
3 – a.1
5 – b.1

b. DEFICIENCY: None

d. AREAS REQUIRING CORRECTIVE ACTION: None

e. NOT DEMONSTRATED: None

f. PRIOR ARCAs – RESOLVED: 5.b.1

Issue No.: 48-02-5.b.1-A-04

Issue for Criterion: 5.b.1 – OROs provide accurate emergency information and instructions to the public and the news media in a timely manner.

Condition: Information in News Release #2 concerning the sheltering of milk producing animals and placing them on stored feed and water was telephoned to the Media Center by the Public Affairs Officer (PAO) for inclusion in news briefings with earlier precautionary actions. The information was not given to the media in either the first or second press briefings. This information was given to the media in the press briefing that started at 1209, approximately two hours after the decision and after portions of the impacted area were told to evacuate.

Effect: Delay of precautionary actions leads to the possibility of putting the public at risk. Precautionary actions are directed to ensure that the public is out of harm's way prior to a release of radioactivity. Owners of milk producing animals, were delayed in sheltering their animals and thus at risk of having to decide whether to shelter them or evacuate as directed.

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

Recommendation: Train Media Center staff to relay information on precautionary actions to the PIO when received, by whatever manner, understanding that there are various ways to confirm the authenticity of the information.

Corrective Action Demonstrated: The Massachusetts Radiological Emergency Response Plan -Nuclear Power Plant Implementing Procedure PIL-11 (Public Information Officer-PIO) was revised in March 2004. It provides for telephone contact, in addition to hard copy transfer of information, among various public information personnel at the State, Regional, and Local Emergency Operations Centers, and the Joint Media Center. It also provides for the prompt distribution of public information (Rev. 13, Page 4, paragraphs 6, 7, 11, and 16). It was obvious during the exercise that Media Center personnel were well trained to relay information to the PIO as soon as it was received, regardless of the method of communication. They were also aware of various ways to confirm authenticity, as determined by observation and interview.

Issue No.: 48-99-12-A-02 (5.b.1)

Description: In contradiction of procedures (PI-11-15, 16; 20a, 20e), only two of the eleven town news releases were distributed and none were read during briefings at the Media Center. Also, while it was not distributed, the Bridgewater General Emergency (GE) news release contained erroneous information that Carver and Kingston and parts of Plymouth had been directed to evacuate. The MEMA PIO staff did not contact the Bridgewater EOC to correct the information. (Objective 12/Evaluation Area Criterion 5.b.1; NUREG-0654, G.3, G.4)

Corrective Action Demonstrated: The Massachusetts Radiological Emergency Response Plan -Nuclear Power Plant Implementing Procedure PIL-11 (Public Information Officer-PIO) was revised (Rev 13) in March 2004. In paragraphs 13, 15, 16, 20a, 20b, 20c, and 20e, it provides for accurate reviews of Town news releases, the release, when appropriate of Town news releases, the prompt distribution of news releases, the provision of additional information on State and Town activities, the monitoring of information provided by other PIO personnel, the confirmation/clarification of Town public information, and the allowance for Town news releases to not be read in their entirety at press conferences, if appropriate. During the exercise, Media Center staff demonstrated the capability to follow these revised procedures, to preclude the distribution of erroneous public information, and to assure the dissemination of prompt, accurate and appropriate public information. Towns were contacted continuously during the exercise, which assured accuracy of news releases. Complete evacuation and sheltering instructional information for resident and transient populations was provided to the media during press briefings. All town news releases were provided to the media, as well as all State and Utility news releases.

f. PRIOR ARCAs – UNRESOLVED: None.

1.6 Massachusetts State Police

The Dosimetry Coordinator at Massachusetts State Police Troop D did an excellent job of maintaining all dosimetry equipment, including KI that was stored at this location. The equipment was packed and stored neatly in two trunks that were kept in a meeting room for easy access and distribution. The way it was stored, made it very easy to put together and issue exposure control protection kits to emergency workers when required.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
3 – a.1, d.1, d.2

b. **DEFICIENCY:** 3.b.1

Issue No.: 48-04-3.b.1-D-01

Condition: The recommendation for MA State Police (MSP) Emergency Workers to ingest KI was not implemented by the MSP Troop D Shift Commander.

Possible Cause: The Shift Commander's plans and procedures do not address advising ACP/ TCP teams to ingest KI when the decision is made by MDPH.

Reference: NUREG-0654, J.10.e

Effect: MSP Emergency Workers may be exposed to radioiodine prior to being informed of the need to take KI.

Recommendation: It is recommended that Shift Commanders and other decision makers at MSP Troop D with a role in radiological emergency response be provided additional training on KI implementation procedures.

MSP Troop D should be added to the MEMA Form 14P KI Guidance Form to ensure timely notification to TCPs/ACPs personnel to ingest KI.

It is also recommended that MEMA provide a staff assistance visit to this location and do a review of the REP Traffic Control Plan and the MSP Shift Commander Procedures to make sure it is in proper order. Some items such as the table of contents, forms, and tabs were missing.

Schedule of Corrective Action:

1. The KI guidance form will be revised to reflect notification to MSP Troop D to occur simultaneously with the EPZ/Host Communities through the BECONS system.
2. MSP Troop D Duty Officer, Dosimetry Coordinator and the Communications Dispatcher procedures will be revised to ensure the KI recommendation is implemented in a timely manner.
3. MEMA Region II Planners will provide a staff assistance visit to the MSP Troop D Headquarters to ensure all position binders are current and in proper order.
4. Training will be provided to the MSP Troop D Duty Officers, Dosimetry Coordinator and the Communications Dispatchers on the revised procedures, which clarify responsibilities regarding the KI recommendation to emergency workers. A tabletop discussion by one designated shift for all three positions will occur on June 14, 2004.

Corrective Action Demonstrated: On June 14, 2004 a Site Assistance Visit to MSP Troop D Headquarters was conducted by a Technical Hazards Specialist from the FEMA Region I Office, along with two MEMA Region II Planners. A copy of the revised KI guidance form was inspected and found to now list Troop D as a recipient of the form. Copies of the revised procedures for MSP Troop D Duty Officer, Dosimetry Coordinator and the Communications Dispatcher now contain instructions that, should KI be recommended for emergency workers by the Massachusetts Department of Public Health, each one of them will ensure that the instruction is relayed to all of the Troop D officers on duty. The procedures, contained in binders, were current and in proper order. A tabletop exercise for the Troop D Duty Officer, Dosimetry Coordinator and the Communications Dispatcher was conducted by the MEMA planners. The Troop D personnel demonstrated the various ways in which KI instructions would be received and how they would ensure the relay of KI instructions to the other Troop D personnel on duty. This action corrects the Deficiency #48-04-3.b.1-D-01.

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

2. RISK JURISDICTIONS

2.1 Carver EOC

The Town of Carver clearly demonstrated their commitment to emergency management. The recently appointed Emergency Management Director strongly demonstrated his knowledge of the Radiological Emergency Response Plan (RERP) and leadership in directing the Emergency Operations Center (EOC) staff in a successful exercise. The EOC staff showed their knowledge of plan procedures and ably assisted the director to a successful exercise conclusion.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
2 – a.1
3 – a.1, b.1, c.1, c.2, d.1, d.2
5 – a.1, a.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

2.2 Duxbury EOC

The emergency response team at the Duxbury EOC worked extremely well together. Under the leadership of the director, information was shared and discussions took place on a regular basis to keep all staff up to speed on the events of the exercise. All EOC staff displayed knowledge of their responsibilities and enthusiastically accomplished their tasks.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
2 – a.1, b.2
3 – a.1, b.1, c.1, c.2, d.1, d.2
5 – a.1, a.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 Kingston EOC

The Kingston Emergency Management Director gave a fine example of direction and control considering this was his first evaluated REP exercise. Several times the Director calmly went around the room and met face-to-face to discuss events, needs, implementing procedures, and offering encouragement, as numerous members of the EOC staff were new to their positions. The Communication staff was efficient, working well with message control staff.

a. MET: Evaluation Area Criterion
1 – a.1, b.1, c.1, d.1, e.1
2 – a.1
3 – a.1, b.1, c.1, c.2, d.1, d.2
5 – a.1, a.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

2.4 Marshfield EOC

The Marshfield EOC was activated promptly and operational in a timely manner. All participants were enthusiastic and dedicated to the public safety mission. Direction and control by the key EOC personnel was very effective. Briefings were conducted frequently and the Emergency Management Director verified conflicting information in the EOC. All communication systems functioned properly throughout the entire exercise. The Message Control group worked very quickly getting copies of messages to all EOC staff.

a. MET: Evaluation Area Criterion
1 – a.1, c.1, d.1, e.1
3 – a.1, b.1, c.1, c.2, d.1, d.2
5 – a.1, a.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 Plymouth EOC

Emergency response staff demonstrated strengths at the Plymouth EOC centered around an assembly of workers dedicated to protecting the health and safety of their town. Volunteers and paid professionals demonstrated a vested interest in planning and preparing for this exercise and therefore, any emergency faced by their community. Of particular note was the hard work exhibited by the support personnel in logging events, serving as couriers of information between the notification point in the basement and the main EOC, and coordinating and duplicating information for all EOC personnel.

a. MET: Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
2 – a.1
3 – a.1, b.1, c.1, c.2, d.1, d.2
5 – a.1, a.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 Schools, Day Care Centers, and Special Facilities

2.6.1 Carver

The staffs of the Carver Elementary School and the Carver High School adequately demonstrated their knowledge of the plans and procedures.

a. MET: Evaluation Area Criterion 1 – d.1, e.1
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 Duxbury

All principals, assistant principals, nurses, and day care directors were exceptionally well prepared to implement their emergency procedures. They were knowledgeable of their responsibilities and keenly aware of the importance of their roles.

a. **MET:** Evaluation Area Criterion 1 – d.1, e.1
3 – b.1, 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 Kingston

All of the personnel interviewed at schools, day care centers and special facilities were very knowledgeable in their plans and procedures. Procedure checklists and logs were accurately maintained. Schools and day cares maintain adequate quantities of potassium iodide (KI).

a. **MET:** Evaluation Area Criterion 1 – d.1, e.1
3 – b.1, c.1, 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

2.6.4 Marshfield

The Marshfield School Department had excellent participation in the exercise and in the out-of-sequence interview. The Governor Winslow Elementary School Principal was very knowledgeable of the emergency procedures and kept excellent documentation of actions taken during the exercise. Marshfield Schools have a separate radio system which allows them to maintain contact with all schools in times of emergency without relying on commercial telephone.

a. **MET:** Evaluation Area Criterion 1 – d.1, e.1
3 – b.1, 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

2.6.5 Plymouth

The staffs of the schools, day cares and special facilities demonstrated knowledge of their plans and procedures and a willingness to ensure the safety of those in their care. They were aware of the actions to take in the event of an emergency at Pilgrim Nuclear Power Station. They were organized and able to respond to all exercise activities in conjunction with their daily administrative responsibilities.

a. **Met:** Evaluation Area Criterion 1 – e.1
3 – b.1, c.1, 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

3. SUPPORT JURISDICTIONS

3.1 Braintree Command Center

Management and staff volunteers exhibited professionalism and dedication to its mission. Leadership was displayed at all times. Teamwork was demonstrated in the emergency response. They were organized, had a good grasp of their individual responsibilities as well as each other's. They were being cross trained so that they could be an alternate for other positions. The Emergency Response Coordinator kept things moving along and gave frequent briefings.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
3 – c.1, d.1, d.2
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

3.1.1 Braintree Reception Center

The Braintree Reception Center and its associated Transportation Staging Area (TSA) were staffed by individuals from the American Red Cross; full-time and volunteer personnel from the Towns of Braintree and Weymouth Emergency Management Agencies; Braintree Police Department and RACES volunteers. This diverse group was able to meld the variety of experience and knowledge they represented to work in concert in achieving the tasks assigned to them.

a. **MET:** Evaluation Area Criterion 1 – a.1, b.1, c.1, d.1, e.1
3 – a.1, b.1, d.1, d.2

b. **DEFICIENCY:** None

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

Issue No.: 48-04-6.a.1.-A-03

Issue for 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.

Condition: No accommodation for pets at the Reception Center.

Possible Cause: There were no animal control personnel at the Reception Center.

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

Effect: BTR-12 of the reception center implementation procedures, which calls for the care of evacuee pets, would not be carried out.

Recommendation: Have personnel available to tend to the needs of pets and service animals.

Schedule of Corrective Action: The Animal Control Officer position will be demonstrated at the next Braintree Reception Center Exercise.

Issue No.: 48-04-6.a.1.-A-04

Issue for 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.

Condition: The secondary monitor conducting the monitoring after decontamination moved the probe too fast and more than one inch away from the individual being monitored. The probe was covered with plastic but not taped and therefore touched the individual

Possible Cause: Improper monitoring technique by the secondary monitor at the women's decontamination station.

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

Effect: Contamination could be missed and cross contamination could occur.

Recommendation: Provide training in proper monitoring procedures.

Schedule of Corrective Action: Training will be provided to Personnel Monitors, which emphasizes the need to move the survey monitor at the appropriate distance and speed and the need to avoid touching the individual with the probe or probe covering. This will be demonstrated at the next Braintree Reception Center Exercise.

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

g. PRIOR ARCAs – UNRESOLVED: None

3.1.2 Milton KI Dispensing Site One – Heritage Hall

This was the premier demonstration of this KI Dispensing Site (KIDS), and the first introduction for the Town of Milton personnel into the radiological emergency preparedness program. The KIDS staff at this location was composed of Milton Fire, Fire Auxiliary, Police and MDPH personnel. All of the staff performed their new KIDS duties flawlessly.

a. MET: Evaluation Area Criterion 1 – b.1, d.1, e.1
3 – b.1, d.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

h. PRIOR ARCAs – UNRESOLVED: None

3.1.3 Milton KI Dispensing Site Two – Trailside Museum

This was the premier demonstration of this KI Dispensing Site (KIDS), and the first introduction for the Town of Milton personnel into the radiological emergency preparedness program. The KIDS staff at this location was composed of Milton Fire, Fire Auxiliary, Police and MDPH personnel. All of the staff at this site distinguished themselves in the same manner as at site one by performing their new KIDS duties flawlessly.

a. MET: Evaluation Area Criterion 1 – b.1, d.1, e.1
3 – b.1, d.1

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTION: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

i. PRIOR ARCAs – UNRESOLVED: None

3.1.4 Transportation Staging Area

The Braintree Transportation Staging Area (TSA) was equipped with two emergency command vehicles, staffed by personnel from the Towns of Braintree and Weymouth Emergency Management Agencies. The radio equipment on the vehicles consisted of command base radio systems and portable handheld radios that had the capability to communicate with the Braintree Command Center as well as the Braintree Reception Center. In addition to the radios each person on station had cell telephones. Each of the communication systems described was adequately demonstrated.

a. **MET:** Evaluation Area Criterion 1 – b.1, d.1, e.1
3 – b.1, d.1

b. **DEFICIENCY:** None

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

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

j. **PRIOR ARCAs – UNRESOLVED:** None

3.2 Bridgewater EOC

The Emergency Management Director exhibited excellent command and control of the Bridgewater Emergency Operations Center (EOC). The Emergency Management Director provided periodic briefings for the EOC staff (broadcast via a public address system to all rooms of the EOC); reviewed and moved press statements and briefing sheets through the system without delay; and, facilitated frequent, productive "round table" updates with representatives of local and volunteer departments and agencies. The Director asked questions and acted to resolving problems as they arose.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
3 – c.1, d.1, d.2
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

3.3 Taunton EOC

The Emergency Management Director provided strong Direction and Control by providing timely decisions and listening to input from the staff, constantly reiterating the necessity to follow the implementing procedures. The EOC was maintained in a low-stress environment which facilitated teamwork and open communications across departments. The EM Director has an abundance of local citizen volunteers especially with regards to the use of RACES in the Communications Room and other facilities. Amateur Radio was an asset to the Taunton Emergency Management Agency. EOC workers were confident and well trained.

a. **MET:** Evaluation Area Criterion 1 – a.1, c.1, d.1, e.1
3 – c.1, d.1, d.2
5 – b.1

b. **DEFICIENCY:** None

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

e. **NOT DEMONSTRATED:** None

f. **PRIOR ARCAs – RESOLVED:** None

g. **PRIOR ARCAs – UNRESOLVED:** None

3.4.1 Caritas Good Samaritan Medical Center
3.4.2 American Medical Response Ambulance Company

The Emergency Medical Technicians (EMT) of the American Medical Response Ambulance Company and the staff of the Caritas Good Samaritan Medical Center Radiological Emergency Area (REA) successfully demonstrated their ability to handle a radiologically contaminated injured patient. This demonstration was done on February 25, 2004. Both the EMTs and REA staff showed enthusiasm for dealing with the unique requirements of the patient's condition.

a. **MET:** Evaluation Area Criterion 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

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

ACP	Access Control Point
ALARA	As Low As is Reasonably Achievable
ARC	American Red Cross
ARCA	Area Requiring Corrective Action
A & N	Alert and Notification
BECONS	Boston Edison Community Notification System
CFR	Code of Federal Regulations
DHHS	U.S. Department of Health and Human Services
DOC	U.S. Department of Commerce
DOE	U.S. Department of Energy
DOI	U.S. Department of the Interior
DOT	U.S. Department of Transportation
DPW	Department of Public Works
EAS	Emergency Alert System
ECL	Emergency Classification Level
EMA	Emergency Management Agency
EMD	Emergency Management Director
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	U.S. Environmental Protection Agency
EPZ	Emergency Planning Zone
ETA	Estimated Time of Arrival
EWE	Emergency Worker Exposure
EWMDS	Emergency Worker Monitoring and Decontamination Station
FAA	Federal Aviation Agency
FCC	Federal Communications Commission
FDA	U.S. Food and Drug Administration
FEMA	Federal Emergency Management Agency
FR	Federal Register

FRERP	Federal Radiological Emergency Response Plan
FTC	Field Team Coordinator
GE	General Emergency
ICF	ICF Consulting, Inc.
IPZ	Ingestion Pathway Zone
KI	Potassium Iodide
LTSA	Local Transportation Staging Area
MCI	Massachusetts Correctional Institution
MDPH	Massachusetts Department of Public Health
MDS	Monitoring and Decontamination Station
MEMA	Massachusetts Emergency Management Agency
MHD	Massachusetts Highway Department
mR	milliroentgen
MSP	Massachusetts State Police
NIAT	Nuclear Incident Advisory Team
NOAA	National Oceanic and Atmospheric Administration
NRC	U.S. Nuclear Regulatory Commission
NUREG-0654	NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guide
PAO	Public Affairs Official
PAR	Protective Action Recommendation
PCSEMA	Plymouth County Sheriff's Emergency Management Agency
PIO	Public Information Officer
PNPS	Pilgrim Nuclear Power Station
R	Roentgen
R/h	Roentgen(s) per hour
RAC	Regional Assistance Committee
RACES	Radio Amateur Civil Emergency Service
REM	Roentgen Equivalent Man
REP	Radiological Emergency Preparedness
RERP	Radiological Emergency Response Plan
REWMDS	Regional Emergency Worker Monitoring and Decontamination Station
RO	Radiological Officer
SEOC	State Emergency Operations Center

TCP	Traffic Control Point
TL	Team Leader
TSA	Transportation Staging Area
TTY	Teletypewriter
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture

APPENDIX 2

EXERCISE EVALUATORS AND TEAM LEADERS

The following is a list of the personnel who evaluated the Pilgrim Nuclear Power Station (PNPS) exercise on April 14, 2004, in the plume exposure pathway emergency planning zone (EPZ) around PNPS, as well as other out-of-sequence demonstrations. Evaluator Team Leaders are indicated by the letters "TL" after their names. The organization which each evaluator represents is indicated by the following abbreviations:

FEMA HQ, EMI	Federal Emergency Management Agency – Headquarters, Emergency Management Institute
FEMA RI,II,VI,VII	Federal Emergency Management Agency – Region I, II, VI, VII
EPA	U.S. Environmental Protection Agency
ICF	ICF Consulting, Inc.
DOT	U.S. Department of Transportation
FDA	Food and Drug Administration
NRC	Nuclear Regulatory Commission

EVALUATION SITE	EVALUATOR	ORGANIZATION
GENERAL OBSERVATIONS	K. Horak	FEMA RI
	D. McElhinney	
	D. Bell	
STATE OF MASSACHUSETTS		
State Emergency Operations Center	J. Gibbons (TL)	FEMA RI
	S. Flowerday	FEMA RVI
	W. Gaudet	FEMA RI
	W. Gawlak	ICF
Region II Emergency Operations Center	R. Poole (TL)	FEMA RI
	D. Petta	DOT
	J. Young	FEMA RVII
Emergency Operations Facility	M. Geer	ICF
	M. Quinn	ICF
Field Monitoring Teams	R. Bernacki	FDA
	J. Hickey	ICF
	T. Honnellio	EPA

EVALUATION SITE	EVALUATOR	ORGANIZATION
Joint Media Center	H. Christiansen	ICF
Massachusetts State Police	B. Hasemann	FEMA RII
RISK JURISDICTIONS		
Carver EOC	R. Swartz	FEMA RI
Duxbury EOC	J. Gallagher R. Smith	FEMA RI ICF
Kingston EOC	P. Nied	ICF
Marshfield EOC	S. Borth C. Lynch	FEMA EMI FEMA RI
Plymouth EOC	R. Rospenda (TL) M. Boots	ICF FEMA RVI
Carver Schools	R. Swartz	FEMA RI
Duxbury Schools, Day Care Centers, and Special Facilities (Out-of-Sequence April 15, 2004)	J. Gallagher R. Smith	FEMA RI ICF
Kingston Schools, Day Care Centers, and Special Facilities (Out-of-Sequence April 15, 2004)	P. Mooney	FEMA RI
Marshfield Schools, Day Care Centers, and Special Facilities (Out-of-Sequence April 15, 2004)	S. Borth	FEMA EMI
Plymouth Schools, Day Care Centers, and Special Facilities (Out-of-Sequence April 15, 2004)	L. DeMarco (TL) B. Hasemann	FEMA RI FEMA RII
SUPPORT JURISDICTIONS		
Braintree Command Center	P. Tenorio N. Costa	FEMA HQ FEMA RI
Braintree Reception Center	REP Staff	FEMA RI
Milton KI Dispensing Sites (Out-of-Sequence May 1, 2004)		

EVALUATION SITE	EVALUATOR	ORGANIZATION
Bridgewater EOC	D. Schneck	NRC RI
Taunton EOC	P. Mooney	FEMA RI
Caritas Good Samaritan Medical Center	J. Gibbons	FEMA RI
American Medical Response Ambulance Co. (Out-of-Sequence February 25, 2004)	R. Poole	FEMA RI

APPENDIX 3

EXERCISE OBJECTIVES AND EXTENT-OF-PLAY AGREEMENT

This appendix lists the exercise objectives that were scheduled for demonstration in the Pilgrim Nuclear Power Station plume exposure pathway on April 14, 2004, in accordance with the extent-of-play agreements approved by FEMA Region I on March 15, 2004. Several out-of-sequence demonstrations (February 25, 2004, May 01, 2004), have been conducted as per extent-of-play agreements approved March 15, 2004.

The Evaluation Areas contained in the *Federal Register* Notice; Federal Emergency Management Agency – Radiological Emergency Preparedness: Exercise Evaluation Methodology, published on September 12, 2001, and amended on 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 criteria are intended for use at all nuclear power plant sites, and because of variations among offsite plans and procedures, an extent-of-play agreement is prepared by the State and approved by FEMA to provide evaluators with guidance on expected actual demonstration of the criteria.

OVERVIEW

The following organizations/locations will demonstrate in 2004:

<u>State Emergency Operations Center</u>
Massachusetts Emergency Management Agency
Massachusetts Department of Public Health
Massachusetts State Police
Massachusetts Highway Department
Massachusetts National Guard
Massachusetts Department of Mental Health
Massachusetts Emergency Animal Response Team
American Red Cross
Federal Emergency Management Agency
U.S. Coast Guard

<u>Region II Emergency Operations Center</u>
Massachusetts Emergency Management Agency – Region II
Massachusetts State Police
Massachusetts Highway Department
Massachusetts National Guard
American Red Cross
RACES Operators

Massachusetts Bay Transportation Authority (MBTA) Representative
Department of Corrections – Bridgewater
Plymouth County Sheriff Emergency Management Agency

Emergency Operations Facility
Pilgrim Nuclear Power Station
Massachusetts Emergency Management Agency
Massachusetts Department of Public Health

Radiological Field Monitoring and Sampling Teams
Pilgrim Nuclear Power Station
Massachusetts Department of Public Health

Media Center
Pilgrim Nuclear Power Station
Massachusetts Emergency Management Agency

State Police Troop D, Middleborough Barracks

Risk Jurisdictions
Carver EOC
Duxbury EOC
Kingston EOC
Marshfield EOC
Plymouth EOC

Support Jurisdictions
Braintree Command Center
Bridgewater EOC
Taunton EOC
Braintree Reception Center (To be demonstrated out of sequence – 5/1/04)
Milton KI Dispensing Site (To be demonstrated out of sequence – 5/1/04)

Schools (To be visited 4/15) * Indicates KI Distribution Plan in place
Carver:
- Carver High School
- Carver Elementary School

Duxbury:
- Alden Elementary School*
- Chandler Elementary School*
- Duxbury High School*
- Duxbury Middle School*
- Duxbury Bay Maritime Academy*

Kingston:
- Kingston Elementary School*

Marshfield:
Governor Winslow School*
Plymouth:
Cold Springs Elementary School*
Federal Furnace Elementary School*
Nathaniel Morton Elementary School*
Plymouth Community Intermediate School*
West Elementary School*

Day Care Centers (To be visited on 4/15) * Indicates KI Distribution Plan in place
Carver:
N/A
Duxbury:
Discovery Corner Day Care
Good Shepard Christian Academy*
South Shore Conservatory Preschool*
Bay Farm Montessori Academy*
Noah's Ark Daycare*
Pied Piper Preschool*
Kingston:
The Children's Workshop
South Shore Head Start and Child Care at Kingston*
Marshfield:
N/A
Plymouth:
Cranberry Country Day School
Methodist Nursery School
Ponds Child Care Center*
South Shore Head Start*
Pilgrim Academy*
Rising Tide Charter School*
Cozy Corner Adult Day Care

The following **day cares are not in session and SHOULD NOT RECEIVE** calls:
Carver:
Old Colony YMCA
Duxbury:
After School Club
Junior Club @ Chandler
Breakfast Club @ Chandler
The Breakfast Club
Kingston:
N/A
Marshfield:
N/A

Plymouth:
Old Colony YMCA After School

Special Facilities (To be visited on 4/15) * Indicates KI Distribution Plan in place
Carver:
N/A
Duxbury:
N/A
Kingston:
Elizabeth Ann Rest Home
Marshfield:
N/A
Plymouth:
Mayflower Nursing Home*
Plymouth Crossings Assisted Living
High Point

Mass Care
No new facilities (copies of Red Cross Surveys will be provided as a baseline to FEMA)

Other
MS-1 Hospital – Caritas Good Samaritan Medical Center – 2/25/04
MS-1 Hospital – Quincy Medical Center - TBA

The following organizations/locations will not demonstrate in 2004:

Schools
Carver:
Governor John Carver Primary (K-2)
Carver Middle School

Duxbury:
N/A

Kingston:
Silver Lake Integrated Preschool
Silver Lake High School
Sacred Heart Preprimary School
Sacred Heart Elementary School
Sacred Heart High School
Pilgrim Area Collaborative (Elementary)
Pilgrim Area Collaborative (Intermediate)
Old Colony Child Care Services
Old Colony Child Care Services (Intermediate)
Fellowship Christian Academy

Kingston Intermediate School

Marshfield:
N/A

Plymouth:
Hedge Elementary School
Indian Brook Elementary School
Manomet Elementary School
Mt. Pleasant Elementary School
Plymouth South Middle School
Plymouth South High School
Plymouth North High School
Oak Street School
South Elementary School

Day Care Centers
Carver:
Captain Pal Day Care Center
Cranberry Crossing Day Care Center
Kids Count Day Care Center
Kidstop Day Care Center

Duxbury:
Berrybrook School
KED-Kindergarten
Learn'n Play Preschool
Magic Dragon Children's Center
Pilgrim Area Collaborative
Pilgrim Day Child Care & Preschool

Kingston:
Children's Center at Silver Lake
First Friends Daycare
Growth Unlimited
Little People's Country Day Care

Marshfield:
N/A

Plymouth:
Bright Beginnings Day Care
Children's Creative Learning Center
Garden of Knowledge
Kidsport Day Care

Kinder Kollege, Inc.
Little Red School House
New Testament School
Pinewood School
Super Kids Day Care
Tiny Town Child Care
Woodside School
Little Bears Play School
Room 2 Grow

Special Facilities

Carver:

N/A

Duxbury:

Baypath at Duxbury/Duxbury House
North Hill Group Home (Westbrook)

Kingston:

Inn at Silver Lake
Skilled Care Center @ Silver Lake
Silver Lake Homes
Adult Day Care Center @ Silver Lake
Meadowcrest
Jones River Guest House
Vinfen Evergreen House
Indian Pond House
Chapter 689 House

Marshfield:

N/A

Plymouth:

Baird Center
Beverly Manor Nursing Home
Chilton House Rest Home
Life Care Center of Plymouth
Sunrise Assisted Living of Plymouth
Jordan Hospital
McLean Hospital
Newfield House
Habilitation Assistance
Teamworks

Receptions Centers
Bridgewater Reception Center
Taunton Reception Center

KI Dispensing Sites
Brockton KI Dispensing Site
Mansfield KI Dispensing Site

MEMA would also like to request implementation of "on the spot" corrections of issues as outlined in Recommendation Initiative 1.5 – Correct Issues Immediately. Letter submitted to FEMA on December 19, 2003.

NOTE: "On the Spot" corrections as requested was approved by FEMA on January 6, 2004.

Exercise Criteria

Listed below are the specific radiological emergency preparedness criteria scheduled for demonstration during this exercise.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-Element 1.a – Mobilization

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

Sub-Element 1.b – Facilities

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

Sub-Element 1.c – Direction and Control

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

Sub-Element 1.d – Communications Equipment

Criterion 1.d.1: At least two communication systems are available, at least one operates properly, and communication links are established and maintained with

appropriate locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1, 2)

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

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

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-Element 2.a – Emergency Worker Exposure Control

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

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

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

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

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

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

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

Sub-Element 3.b – Implementation of KI Decision

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

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

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

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

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

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

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

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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

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

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

EVALUATION AREA 5: EMERGENCY NOTIFICATION AND PUBLIC INFORMATION

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

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

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

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

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-Element 6.a – Monitoring & 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)

B. Extent-of-Play Agreements

The extent-of-play agreements on the following pages were submitted by the Commonwealth of Massachusetts and were approved by FEMA Region I on March 15, 2004, in preparation for the PNPS exercise for Massachusetts on April 14, 2004. The extent-of-play agreements include any significant modification or change in the level of demonstration of each exercise criteria listed in Subsection A of this Appendix.

Evaluation Area 1: Emergency Operations Management
Sub-element 1.a – Mobilization

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

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

EXTENT-OF-PLAY – GENERAL

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

All activities must be based on the OROs plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

EXTENT-OF-PLAY – SPECIFIC

State EOC: Emergency staff who normally work at the SEOC and who fill emergency positions at the SEOC will report at the times they normally report for work unless they are paged/called and directed to report for duty at an earlier time. No prestaging; real-time mobilization for all other emergency staff. Operations/communications staff will show call down or computerized lists to the FEMA evaluator. A second shift roster for designated key personnel will be developed and shown to the evaluator.

EOF: No prestaging; real-time mobilization.

Media Center: No prestaging; real-time mobilization.

Region II: Staff who work at Region II EOC will report at the times they normally report for work unless they are paged/called by the SEOC and directed to report for duty at an earlier time. No prestaging; real-time mobilization for all other emergency staff. Operations/communications staff will show call down lists to the FEMA evaluator. A second shift roster for designated key personnel will be developed and shown to the evaluator.

EPZ EOCs: Traffic Control personnel will not be deployed to control points, but local police who would implement traffic and control will be called to the EOC for an interview with the FEMA Evaluator on procedures for activating and operating traffic control points.

Braintree Command Center: Braintree Command Center will demonstrate mobilization of personnel for the Braintree Reception Center by verifying availability of staff and obtaining their ETA; however, no mobilization of staff will occur on April 14, 2003. Reception Center staff will demonstrate out of sequence; they will be prestaged. A copy of the staff calldown roster for Reception Center staff ETAs will be provided to the FEMA Evaluator.

NIAT Field Monitoring Team Personnel: No prestaging; real-time mobilization.

State Police Troop D Middleboro Barracks: Will dispatch representatives to the Region II EOC and will develop rosters for state traffic and access control point personnel. No control point personnel will actually be mobilized. One traffic control point and one access control point will be demonstrated through an interview with the FEMA Evaluator.

Transportation Providers: Initial calls will be made to all transportation providers to verify the contact information and resources (drivers and vehicles) under the LOA. A Controller inject will provide the number of vehicles and drivers available for exercise play purposes. No mobilization of vehicles or personnel will occur.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 1: Emergency Operations Management
Sub-element 1.b – Facilities

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

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

EXTENT-OF-PLAY – GENERAL

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). However, FEMA will evaluate all facilities, as a baseline, during the first exercise under the new Evaluation Criteria.

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

EXTENT-OF-PLAY – SPECIFIC

There will be no exceptions to this sub-element in the Massachusetts Extent of Play. Kingston EOC will be evaluated to establish a baseline.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 1: Emergency Operations Management
Sub-element 1.c – Direction and Control

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

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

EXTENT-OF-PLAY – GENERAL

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.

EXTENT-OF-PLAY – SPECIFIC

EPZ EOCs: If any towns are directed to evacuate, EOC personnel will demonstrate continuity of government through a discussion of logistics. Closing of the local EOC and relocation to a facility outside the EPZ will be simulated through discussion.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

Issue No: 48-02-1.c.1-A-03

Condition: The Massachusetts State Police (MSP) Troop D MEMA Region II EOC representative did not keep the MSP Troop Commander updated with timely information. This information included the Governor's State of Emergency Declaration and the first siren soundings.

Schedule of Corrective Action: The requirement for the timely exchange of information will be addressed with the State Police Representative(s) at future training sessions.

Evaluation Area 1: Emergency Operations Management
Sub-element 1.d – Communications Equipment

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

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

EXTENT-OF-PLAY – GENERAL

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

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

EXTENT-OF-PLAY – SPECIFIC

Contact with locations not playing will be simulated. See Extent of Play Overview for the listing of facilities that will not be playing during the exercise (pages 1–6).

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 1: Emergency Operations Management
Sub-element 1.e – Equipment And Supplies to Support Operations

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

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

EXTENT-OF-PLAY – GENERAL

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

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

Certification, and/or through a staff assistance visit.

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

Documentation of dosimetry inspection, dosimetry inventory and KI inventory will be available for review at the Region II office. Note: FEMA will provide copies of the Annual Letter of Certification to evaluators, as appropriate.

Note: Approved for "On the Spot" Correction where players are initially unable to show proper equipment, supplies, or documentation.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

Issue No. 48-02-1.e.1-A-01

Condition: News Release Number 2 (hard copy) informing the Media Center, Region II, and EOCs of the decision to recommend that farm animals be sheltered and put on stored feed and water was not received due to multiple equipment failures with the fax machines.

Schedule of Corrective Action: MEMA has purchased replacement fax machines. The PIO has been trained to act upon verbal transmission particularly when there are equipment problems.

Evaluation Area 2: Protective Action Decision-Making
Sub-element 2.a – Emergency Worker Exposure Control

Previous Objective 5. Emergency Worker Exposure Control

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

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

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

EXTENT-OF-PLAY – GENERAL

OROs authorized to send emergency workers into the plume exposure pathway EPZ should demonstrate a capability to meet the criterion based on their emergency plans and procedures.

Responsible OROs should demonstrate the capability to make decisions concerning the authorization of exposure levels in excess of pre-authorized levels and to the number of emergency workers receiving radiation dose above pre-authorized levels.

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

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

EXTENT-OF-PLAY – SPECIFIC

There will be no exceptions to this sub-element in the Massachusetts Extent of Play.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 2: Protective Action Decision-Making
Sub-element 2.b – Radiological Assessment and Protective Action Recommendations and Decisions of the Plume Phase of the Emergency

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to use all available data to independently project integrated dose and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the OROs' plans and procedures or EPA 400–R– 92–001 and other criteria, such as, plant conditions, licensee protective action recommendations (PARs), coordination of protective action decisions with other political jurisdictions (for example, other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

EXTENT-OF-PLAY – GENERAL

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

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the 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 ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

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

EXTENT-OF-PLAY – SPECIFIC

There will be no exceptions to this sub-element in the Massachusetts Extent of Play.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 2: Protective Action Decision-Making
Sub-element 2.b – Radiological Assessment and Protective Action Recommendations and Decisions of the Plume Phase of the Emergency

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to use all available data to independently project integrated dose and compare the estimated dose savings with the protective action guides (PAGs). OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400–R– 92–001 and other criteria, such as, plant conditions, licensee protective action recommendations (PARs), coordination of protective action decisions with other political jurisdictions (for example, other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

EXTENT-OF-PLAY – GENERAL

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

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

If the ORO has determined that KI will be used as a protective measure for the general public under 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 procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

EXTENT-OF-PLAY – SPECIFIC

There will be no exceptions to this sub-element in the Massachusetts Extent of Play. The State's decision-making process for distribution of KI for the general public will be tested for the first time during this exercise.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 2: Protective Action Decision-Making
Sub-element 2.c – Protective Action Decisions for the Protective Actions for Special Populations

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

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

EXTENT-OF-PLAY – GENERAL

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 (i.e., either accepts automatically or gives heavy weight to) protective action

recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).

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

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

EXTENT-OF-PLAY – SPECIFIC

There will be no exceptions to this sub-element in the Massachusetts Extent of Play.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 2: Protective Action Decision-Making
Sub-element 2.d – Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO's planning criteria. (NUREG-0654, J.9, J.11)

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

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

EXTENT-OF-PLAY – GENERAL

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

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 2: Protective Action Decision-Making
Sub-element 2.e – Radiological Assessment and Decision-Making Concerning Relocation, Re-entry and Return

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a nuclear power plant.

EXTENT-OF-PLAY – GENERAL

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

Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.

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

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

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

policies for provision of dosimetry to all individuals allowed to re-enter the restricted zone. The extent that OROs need to develop policies on re-entry will be determined by scenario events.

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.a – Implementation of Emergency Worker Exposure Control

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

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

EXTENT-OF-PLAY – GENERAL

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

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

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

Although it is desirable for all emergency workers to each have a direct-reading dosimeter, there may be situations where team members will be in close proximity to each other during the entire mission and adequate control of exposure can be affected for all members of the team by one dosimeter worn by the team leader. Emergency workers who are assigned to low exposure rate areas, e.g., at reception centers, counting laboratories, emergency operations centers, and communications centers, may have individual direct-reading dosimeters or they may be monitored by dosimeters strategically placed in the work area. It should be noted that, even in these situations, each team member must still have their own permanent record dosimetry. Individuals without specific radiological response missions, such as farmers for animal care, essential utility service personnel, or other members of the public who must re-enter an evacuated area following or during the plume passage, should be limited to the lowest radiological exposure commensurate with completing their missions.

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

EXTENT-OF-PLAY – SPECIFIC

State Police Troop D, Middleboro: Dosimetry packets will be issued to two State Police traffic control personnel, who will demonstrate knowledge of the use of dosimetry and Massachusetts policies on dosimetry through an interview with the FEMA Evaluator.

EPZ EOCs: Dosimetry packets will be issued to field staff that will be working outdoors within the EPZ and to a minimum of two individuals who will be working inside each EPZ EOC. Knowledge of the use of dosimetry and Massachusetts policies on dosimetry will be demonstrated through an interview with the FEMA Evaluator.

Note: Approved for "On the Spot" Correction dealing with issuing of dosimeters and briefing; also to be included is the emergency worker demonstration of exposure knowledge.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.b – Implementation of KI Decision

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

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

EXTENT-OF-PLAY – GENERAL

Offsite Response Organizations (ORO) should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan and/or procedures, to members of the general public. OROs should demonstrate the capability to accomplish distribution of KI consistent with decisions made. Organizations should have the capability to develop and maintain lists of emergency workers and institutionalized individuals who have ingested KI, including documentation of the date(s) and time(s) they were instructed to ingest KI. The ingestion of KI recommended by the designated ORO health official is voluntary.

For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate

information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

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

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

EXTENT-OF-PLAY – SPECIFIC

Actual distribution and ingestion of KI will not occur. Empty KI tablet containers (small zip-lock bags) will be included in the dosimetry packets for emergency workers.

School and Day Care staff, including the school nurse and/or teacher who administer KI, will be interviewed on 4/15 by the FEMA Evaluator, who will review logs from the previous day's activities. As part of the demonstration of KI distribution, the FEMA Evaluator should be briefed as if they were the recipient of the KI. The evaluator will check the availability of adequate quantities, storage, and means of KI distribution, to include forms and equipment to be used.

The availability/distribution of KI at the designated Duxbury shelter to be opened (through Controller inject) will be demonstrated by the Shelter Manager through an interview with the FEMA Evaluator.

The KI Dispensing Site will be demonstrated out-of-sequence – May 1, 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.c – Implementation of Protective Actions for Special Populations

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

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

EXTENT-OF-PLAY – GENERAL

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

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

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

EXTENT-OF-PLAY – SPECIFIC

SEOC: The U.S. Coast Guard representative will establish initial contact with the District Command Center; thereafter, communications will be simulated and logged. No broadcasting over the Urgent Marine Information Broadcast will occur. Communications with the Captain of the Port will also be simulated and logged.

Region II: Initial calls will be made to all transportation providers to verify the contact information and resources (drivers and vehicles) under the LOA. A Controller message will provide the number of vehicles and drivers available for exercise play. No vehicles or personnel will be mobilized.

Region II Special Facility Coordinator and staff will demonstrate all appropriate communications with EPZ community EOC to verify number of vehicles and beds. Evacuation of special facilities will not occur. A Controller message will provide the number of estimated bed spaces in host hospitals.

EPZ EOCs: All special facilities will receive initial contact; thereafter, only participating special facilities will continue to receive calls related to the exercise. (See the Extent of Play Overview for the listing of those facilities not playing in the exercise (pages 1-6).

EPZ EOC staff will report to Region II the number of additional beds needed to accommodate patients from each participating facility that may be directed to evacuate; however, no patients will actually be moved or be impacted in any way. Controller messages will provide this information.

EPZ EOC staff will simulate initial contact with persons with special needs, controllers will provide players with a simulated special needs list containing a minimum of five fictitious names and ten fictitious names for Plymouth and information and a control cell number. The list of

special needs individuals will be shown to the FEMA evaluator; however, the information is confidential and copies will not be provided to the evaluator. The capability to correctly operate a TTY will be demonstrated in each EPZ EOC by sending and receiving one test message to and from a TTY at the control cell. No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Identified special facilities will participate on April 14, 2004. Participating facilities will be visited on April 15, 2004, by a FEMA evaluator, who will interview key players and review the emergency log from April 14th. (See the Extent of Play Overview for listing of identified special facilities (pages 1-6).

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.c – Implementation of Protective Actions for Special Populations

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

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

EXTENT-OF-PLAY – GENERAL

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

EPZ EOCs: Initial notification will be made to all school and day care centers (unless otherwise noted); thereafter, calls will be made only to those schools and day care centers that will participate in the exercise. Controller information will be provided for school and day care centers not scheduled for participation to enable verification of transportation needs. A listing of participating and non-participating schools and day care centers is provided in the Extent of Play Overview (pages 1-6).

EPZ Schools: Participating schools in the EPZ communities will receive initial and subsequent contacts. Unless otherwise noted, participating facilities will be visited on 4/15/04 by a FEMA evaluator, who will interview key players (and if the site's plan calls for KI, responsible staff) and review the emergency log and student rosters from April 14th.

Day Care Centers: Participating day care centers in the EPZ communities will receive the initial and subsequent contacts. Participating facilities will be visited on 4/15/04 by a FEMA evaluator who will interview key players (and if the site's plan calls for KI, responsible staff) and review the Day Care Emergency Checklist.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.d – Implementation of Traffic and Access Control

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) have the capability to implement protective action plans, including relocation and restriction of access to evacuated/sheltered areas. This sub-element focuses on

selecting, establishing, and staffing of traffic and access control points and removal of impediments to the flow of evacuation traffic.

EXTENT-OF-PLAY – GENERAL

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

State Police Troop D Barracks: Two personnel who might be assigned traffic and access control duties will be interviewed by the FEMA evaluator on the procedures for operating an access control point. These questions may include the following topics: purpose, kind and use of dosimetry, procedures for reading dosimetry, reporting levels, obtaining equipment for setting up an access control point, or procedures for opening an access control point. No deployment to TCP/ACP locations will occur.

EPZ EOCs: EPZ EOCs will demonstrate the ability to direct and monitor traffic control operations within their jurisdictions through discussions and communications with the evaluator. The EOC local highway representative will participate in a discussion of procedures and resources available for traffic control. No personnel or equipment will be deployed to field locations.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.d – Implementation of Traffic and Access Control

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

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

EXTENT-OF-PLAY – GENERAL

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 OROs plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

EXTENT-OF-PLAY – SPECIFIC

Each EPZ Local EOC will demonstrate decision-making regarding rerouting of traffic following a traffic impediment, in response to a controller message, through an interview with the FEMA Evaluator. No personnel or equipment will be dispatched to the accident scene.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.e – Implementation of Ingestion Pathway Decisions

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

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

EXTENT-OF-PLAY – GENERAL

Applicable OROs should demonstrate the capability to secure and utilize current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the ingestion pathway EPZ.

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.e – Implementation of Ingestion Pathway Decisions

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

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

EXTENT-OF-PLAY – GENERAL

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

For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 3: Protective Action Implementation
Sub-element 3.f – Implementation of Relocation, Re-entry, and Return Decisions

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

EXTENT-OF-PLAY – GENERAL

Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the (first-,second-, and fifty-year) PAGs.

Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. OROs should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.

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

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

Return: OROs should demonstrate the capability to implement policies concerning return of members of the public to areas that were evacuated during the plume phase. OROs should demonstrate the capability to identify and prioritize services and facilities that require restoration within a few days, and to identify the procedures and resources for their restoration. Examples of these services and facilities are medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons. Communications among OROs for relocation, re-entry, and return may be simulated; however all simulated or actual contacts should be documented. These discussions may be accomplished in a group setting.

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None.

Evaluation Area 4: Field Measurement and Analysis
Sub-element 4.a – Plume Phase Field Measurements and Analyses

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to detect radioactive particulate material in the airborne plume. In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT-OF-PLAY – GENERAL

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

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

EXTENT-OF-PLAY – SPECIFIC

Two field teams will each collect a minimum of two complete samples and then continue to collect samples as directed by the Field Team Coordinator until termination of the exercise.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 4: Field Measurement and Analysis
Sub-element 4.a – Plume Phase Field Measurements and Analyses

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (ORO) should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to detect radioactive particulate material in the airborne plume. In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT-OF-PLAY – GENERAL

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

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

Coordination concerning transfer of samples to a lab will be simulated by the MDPH Field representative and discussed in an interview with the FEMA evaluator.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 4: Field Measurement and Analysis
Sub-element 4.a – Plume Phase Field Measurements and Analyses

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to detect radioactive particulate material in the airborne plume. In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT-OF-PLAY – GENERAL

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

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

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

EXTENT-OF-PLAY – SPECIFIC

There are no exceptions to this sub-element in the Massachusetts Extent of Play.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 4: Field Measurement and Analysis
Sub-element 4.b – Post Plume Phase Field Measurements and Sampling

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the Ingestion Pathway Zone and for relocation, re-entry, and return measures. This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

EXTENT-OF-PLAY – GENERAL

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 4: Field Measurement and Analysis
Sub-element 4.c – Laboratory Operations

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

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

EXTENT-OF-PLAY – GENERAL

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

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 laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the

ORO's plans and procedures. The laboratory (laboratories) instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclides released in a reactor incident should be as described in the plans and procedures. New or revised methods may be used to analyze atypical radionuclide releases (e.g., transuranics or as a result of a terrorist event) or if warranted by circumstances of the event. Analysis may require resources beyond those of the ORO.

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

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be exercised in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 5: Emergency Notification and Public Information
Sub-element 5.a – Activation of the Prompt Alert and Notification System

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

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

EXTENT-OF-PLAY – GENERAL

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

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 extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location. The initial message should include the elements required by current FEMA REP guidance.

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

<u>State EOC:</u> Actions to demonstrate performance of initial notification of the public will be performed up to the point of actual transmission of the Emergency Alert System (EAS) message. The EAS message will be prepared and the radio stations (WBMX and WPLM) will be contacted. A standard test message will be faxed to the stations and broadcast once at the EAS stations'

convenience. WBMX and WPLM will be visited and interviewed by the FEMA Evaluator to demonstrate knowledge of the EAS procedure.

EPZ Towns: Local EOCs will demonstrate the actions necessary to perform siren activation up to the point of actual sounding of the sirens. Siren sounding will be simulated.

Plymouth EOC: Will participate in a discussion of the steps required for activation of the voice function of the sirens on Saquish Neck, Gurnet Point, and Clark's Island with the FEMA Evaluator.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 5: Emergency Notification and Public Information
Sub-element 5.a – Activation of the Prompt Alert and Notification System

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

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

EXTENT-OF-PLAY – GENERAL

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

For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route

should be simulated (that is, the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed-upon location.

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

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

EXTENT-OF-PLAY – SPECIFIC

Route Alerting will occur for one designated route for each local EPZ community. Exercise play will include at minimum: Route Alert EOC Representative (Fire), Shift Commander(if needed for chain of communication) and the Fire Alarm Operator (to keep communication log). The Out of Sequence demonstration will include at a minimum: Route Alert Team Leader, Route Alert Team Members and the Dosimetry Coordinator. The route will be selected at the appropriate time during the course of play (through Controller message), but will be driven out of sequence, after the end of the exercise. The route map, personnel rosters and the emergency PA message will be shown to the FEMA Evaluator.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 5: Emergency Notification and Public Information
Sub-element 5.b – Emergency Information and Instructions for the Public and the Media

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) should have the capability to disseminate to the public appropriate emergency information and instructions, including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure that the capability exists for providing

information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG-0654 also provides that a system should be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

EXTENT-OF-PLAY – GENERAL

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

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

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

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

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

OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute media releases as the situation warrants. The OROs should demonstrate the capability to

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

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

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

EXTENT-OF-PLAY – SPECIFIC

Media Center: Controllers will act as media representatives.

Information generated as a result of incoming calls to the SEOC Public Information Line phones will be included in news briefings. At least two rumor trends will be handled.

Note: Approved for "On the Spot" Correction dealing with issuing of dosimeters and briefing; also to be included is the emergency worker demonstration of exposure knowledge.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

Issue No: 48-02-5.b.1-A-04

Condition: Information in News Release #2 concerning the sheltering of milk producing animals and placing them on stored feed and water was telephoned to the Media Center by the Public Affairs Officer (PAO) for inclusion in news briefings with earlier precautionary actions. The information was not given to the media in either the first or second press briefings. This information was given to the media in the press briefing that started at 1209, approximately two hours after the decision and after portions of the impacted area were told to evacuate.

Schedule of Corrective Action: As previously noted, the failure of the fax machines caused many problems in meeting timely criterion. The PIO staff will be trained to act on verbal transmission as a backup and not wait for hard copy to verify information as happened in this situation.

PRIOR ARCAs – UNRESOLVED:

Issue No: 48-99-12-A-02 (5.b.1)

Description: In contradiction of procedures (P1-II-15, 16, 20A, 20e), only two of the 11 town news releases were distributed and one were read during briefings at the Media Center. Also, while it was not distributed, the Bridgewater General Emergency (GE) news release contained erroneous information that Carver and Kingston and parts of Plymouth had been directed to evacuate. The MEMA PIO staff did not contact the Bridgewater EOC to correct the information.

Recommendation: Due to time constraints, the verbatim reading of town News Releases could be redundant. The plan should be changed to have these releases by reviewed by PIO staff for pertinent information that is not included in State News Releases and include only that in media briefings.

State EOC: Control cell personnel will make calls simulating members of the public and media personnel. The public information staff will demonstrate the ability to handle calls on the public information line. Handling at least two rumor trends (three or more calls of the same nature) will be demonstrated. Two public information line operators each will respond to calls once the Public Alert and Notification System has been activated at Site Area Emergency or General Emergency.

EPZ Towns, Taunton and Bridgewater EOCs and Braintree Command Center: Control cell personnel will make calls to the local EOCs simulating members of the public. Each local EOC will demonstrate the community's emergency response and to refer all other questions to the State Public Information Line.

Evaluation Area 6: Support Operations/Facilities
Sub-element 6.a – Monitoring and Decontamination of Evacuees and Emergency Workers and Registration of Evacuees

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

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

EXTENT-OF-PLAY – GENERAL

Radiological monitoring, decontamination, and registration facilities for evacuees/ emergency workers should be set up and demonstrated as they would be in an actual emergency or as indicated in the extent of play agreement. This would include adequate space for evacuees' vehicles. Expected demonstration should include 1/3 of the monitoring teams/portal monitors

required to monitor 20% of the population allocated to the facility within 12 hours. Prior to using monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

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.

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

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

Braintree Reception Center will demonstrate out of sequence – May 1, 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 6: Support Operations/Facilities
Sub-element 6.b – Monitoring and Decontamination of Emergency Worker Equipment

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

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

EXTENT-OF-PLAY – GENERAL

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

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

should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be demonstrated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 6: Support Operations/Facilities
Sub-element 6.c – Temporary Care of Evacuees

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

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

EXTENT-OF-PLAY – GENERAL

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

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

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

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

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be evaluated in 2004. (No new facilities have been identified.)

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

Evaluation Area 6: Support Operations/Facilities
Sub-element 6.d – Transportation and Treatment of Contaminated Individuals

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

Intent – This sub-element derives from NUREG-0654, which provides that Offsite Response Organizations (OROs) should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

EXTENT-OF-PLAY – GENERAL

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 prior to releasing the ambulance from the drill. This communication would include reporting radiation monitoring results, if available. Additionally, the ambulance crew should demonstrate, by

interview, knowledge of where the ambulance and crew would be monitored and decontaminated, if required, or whom to contact for such information.

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

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

The medical facility should demonstrate the capability to make decisions on the need for decontamination of the individual, to follow appropriate decontamination procedures, and to maintain records of all survey measurements and samples taken. All procedures for the collection and analysis of samples and the decontamination of the individual should be demonstrated or described to the evaluator.
All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

EXTENT-OF-PLAY – SPECIFIC

This sub-element will not be demonstrated in 2004.

AREAS REQUIRING CORRECTIVE ACTION (ARCA)

None

APPENDIX 4

EXERCISE SCENARIO

This appendix contains a summary of the simulated sequence of events – Exercise Scenario – which were used as the basis for invoking emergency response actions by Massachusetts's offsite

response organizations (OROs) in the Pilgrim Nuclear Power Station (PNPS) exercise on April 14, 2004.

This exercise scenario was submitted by the Commonwealth of Massachusetts and the PNPS, and approved by FEMA Region I on March 15, 2004.

During the exercise, controllers gave "inject messages," containing scenario events and/or relevant data, to those persons or locations who would normally receive notification of such events. These inject messages were the method used for invoking response actions by OROs.

Initial Conditions

The plant is at the end of an extended high power run of greater than 400 days. It is a cloudy spring day with seasonal temperatures. The wind is from the Northeast at 6 to 10 MPH. Skies are expected to remain partly cloudy throughout the day. The temperature is 49 degrees.

Sequence of Events

The Exercise is initiated when the Control Room (CR) receives a report from the field that a maintenance crew working with an epoxy resin has detected that the resin has begun to emit noxious fumes. The cooling unit for the epoxy has tripped and the crew is trying to restart it. A second field report is received from the reactor building (RB) operator that fumes are entering the RB from the epoxy. The operator reports that (s)he and another plant worker are feeling ill and are going to seek medical attention. The crew will enter PNPS procedure 5.5.4, "Response to Hazardous Material Incidents" and will summon Safety and the Licensed Site Professional Coordinator (LSPC) to the CR.

The Shift Manager (SM) declares an ALERT based on EAL 7.3.1.2, ENTRY OF A FLAMMABLE OR TOXIC GAS INTO A PLANT PROCESS BUILDING WHICH AFFECTS PLANT OPERATION. When the Alert is declared, the Emergency Response Organization (ERO) and all appropriate Offsite Jurisdictions are notified. When sufficient numbers of ERO responders arrive at PNPS Emergency Response Facilities (ERF), each facility will be activated.

As the crew continues implementation of PNPS procedure 5.5.4, the Safety Supervisor and the LSPC will recommend that the mixing tank be moved away from the RB ventilation intake. After the mixing tank is moved, safety personnel perform a walk down of the RB to determine if the fumes have dissipated. When the fumes have dissipated, the RB is declared safe for entry.

Approximately one hour after the Alert has been declared, the "A" Reactor Recirculation Pump speed controller will fail upscale. The crew will attempt to lock up the pump but will not succeed. Before power rises to the scram set point, the crew will trip the pump per PNPS procedure 2.4.20, "Reactor Recirculation System Speed or Flow Control System Malfunction." Coincident with the pump trip, a fuel failure will occur and will be observed when the "Main Steam Line High Radiation" alarm comes in. The crew will enter procedure 2.4.40, "Rapid Increase in Main Steam

Line or Off Gas Activity." Reactor power will be lowered to limit releases to below the values stated in Plant Technical Specifications.

Chemistry will be requested to perform a sample of reactor coolant and test for iodine. However, the chemistry technician reports exceeding the allowable dose rate alarm setpoint during sample purge. The sample is aborted and the decision is made to scram the reactor.

When the scram is initiated, control rods do not go in and reactor power remains greater than 3%. The CR will inject boron through the Standby Liquid Control System (SBLC) and a SITE AREA EMERGENCY (SAE) will be declared based on EAL 2.3.1.3, REACTOR POWER GREATER THAN 3% AND BORON INJECTION INTO THE REACTOR PRESSURE VESSEL INTENTIONALLY INITIATED WITH SBLC. The CR will carry out the actions of Emergency Operating Procedure (EOP)-02, "RPV Control, Failure to Scram." A determination will be made with regard to Main Steam Isolation Valve (MSIV) closure. Closing the MSIVs will prevent an offsite release through the off-gas system, but can make response to the failure-to-scram transient more difficult. Whether or not the MSIVs are closed will have no impact on the scenario. The operators will be able to inject boron as well as drive control rods manually to lower power and avoid an offsite release.

As a result of the reactor scram, it is expected that the Reactor Water Cleanup System (RWCU) will isolate at +12 inches RPV Water Level. RWCU will isolate except that MO-1201-02, the inboard isolation valve, will fail to close. When a leak develops outside of the Primary Containment System in the RWCU Heat Exchanger Room, the CR enters EOP-04, "Secondary Containment Control."

While the ERO attempts to repair the breaker for MO-1201-02, the release from the secondary containment system through the main stack approaches 240,000 counts per second (cps) and in accordance with EOP-05, "Rad Release Control," an emergency RPV depressurization will be required (EOP-27). However, release rates continue to rise until the main stack release rate exceeds 240,000 cps. Then the ERO will declare a GENERAL EMERGENCY (GE) based on EAL 5.1.1.4, VALID MAIN STACK PROCESS RADIATION MONITOR 1705-18A AND B READING GREATER THAN 240,000 CPS.

After the GE is declared, electricians are successful at repairing the breaker for MO-1201-02 and the valve will go closed, terminating the release.

Termination

The Exercise will be terminated when all onsite and offsite objectives have been demonstrated.