



FEMA

February 1, 2011

Bill Dean
Regional Administrator
U.S. NRC Region I
475 Allendale Road
King of Prussia, PA 19406-1415

Dear Mr. Dean:

Enclosed find a copy of the Final Report for the Pilgrim Nuclear Power Station Plume and Ingestion Exercise that was conducted on November 16-17, 2010.

The Commonwealth of Massachusetts, State of Rhode Island, and local emergency response organizations successfully demonstrated their capabilities to implement off-site radiological emergency response plans and procedures based on the evaluation by the Regional Assistance Committee and a team of Federal evaluators. There were no deficiencies, three Areas Requiring Corrective Action (ARCA's), and one Planning Issue identified during the exercise. All ARCA's from the previous exercise were resolved.

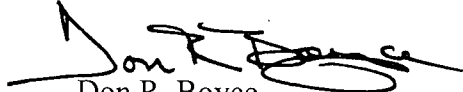
State and local preparedness remains adequate to protect the health and safety of the public living in the vicinity of the Pilgrim Nuclear Power Station and provides reasonable assurance that appropriate measures can be taken off-site in the event of a radiological emergency.

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Mr. Dean
February 1, 2011
Page 2

If you have any questions or concerns, please contact Steve Colman, Regional Assistance Committee Chair at (617) 832-4731, or Taneeka Hollins, Pilgrim Site Specialist, at (617) 956-7523.

Sincerely,

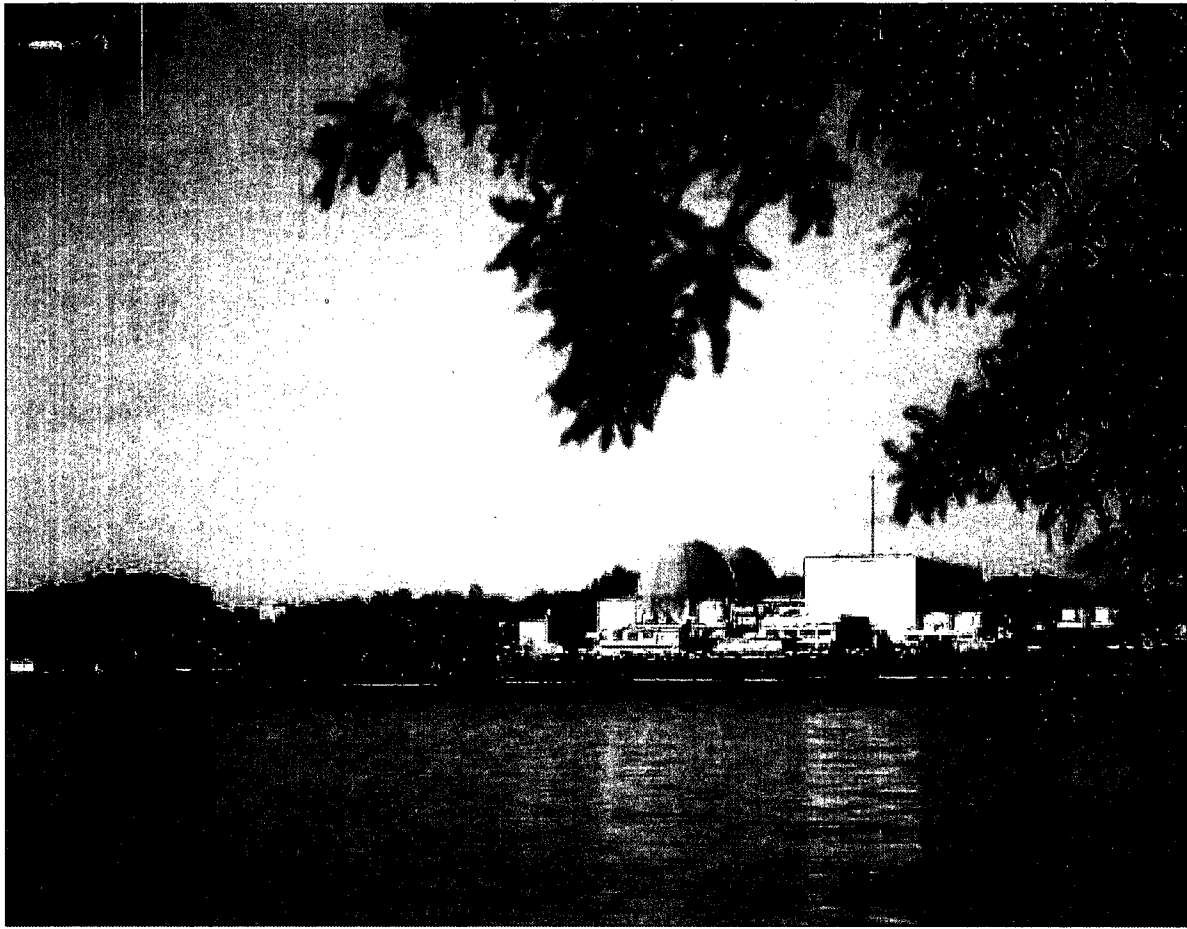


Don R. Boyce
Regional Administrator

DRB:th

cc: NRC Headquarters Document Control Desk
Marc Dapas, Deputy Regional Administrator
Brian McDermott, Director, NRC Division of Preparedness and Response
James Wiggins, Director, NRC Office of Nuclear Security and Incident Response
Robert Kahler, Chief, NRC Inspection and Regulatory Improvements Branch
Nancy McNamara, NRC Region I Liaison
Vanessa Quinn, Branch Chief, FEMA REP HQ
Rebecca Fontenot, Regional Project Officer, FEMA REP HQ

Enclosure



Pilgrim Nuclear Power Station

After Action Report/ Improvement Plan

Exercise Date - November 17, 2010

Radiological Emergency Preparedness (REP) Program



FEMA

Published January 26, 2011

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Pilgrim Nuclear Power Station After Action Report/Improvement Plan

Published January 26, 2011

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EXECUTIVE SUMMARY

On November 16 & 17, 2010 a full-scale plume/ingestion exercise was conducted in the 10-mile plume and the 50-mile ingestion exposure pathway, emergency planning zone (EPZ) around the Pilgrim Nuclear Power Station (PNPS) by the Federal Emergency Management Agency (FEMA), Region I. Out-of-sequence demonstrations of local schools, daycares, Medical Service (MS-1) Hospitals and special facilities were conducted on various dates from August through December, 2010. The purpose of the exercise and the out-of-sequence demonstrations was to assess the level of State and local preparedness in responding to a radiological emergency. The exercise and out-of-sequence demonstrations were held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures. The most recent prior full-scale exercise at this site was conducted on April 2, 2008. 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; the host jurisdictions of Bridgewater and Braintree; and the State of Rhode Island who were evaluated at 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 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 of all the participants were evident during this exercise.

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

- Duxbury schools and day care centers
- Kingston schools, day care centers, and special facilities

- Plymouth schools, day care centers, and special facilities
- Caritas Good Samaritan Medical Center- MS-1 Hospital

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 were no Deficiencies identified, two Areas Requiring Corrective Action (ARCAs) in Massachusetts, and one ARCA and Planning Issue in Rhode Island. There were also four ARCA's in MA from the previous exercise which were successfully re-demonstrated.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name

Pilgrim Nuclear Power Station

Type of Exercise

Ingestion

Exercise Date

November 17, 2010

Program

Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type

Radiological Emergency

1.2 Exercise Planning Team Leadership

Taneeka Hollins

Site Specialist

FEMA Region One

Tech Hazards Specialist

99 High Street, Fifth Floor

Boston, Massachusetts, 02110

617-956-7523

Taneeka.Hollins@dhs.gov

John Giarusso

Tech Hazards Specialist/Planning Manager

Massachusetts Emergency Management Agency

Planning and Preparedness Division Manager

400 Worcester Road

Framingham, Massachusetts, 01702
508-820-2040
John.Giarusso@state.ma.us

Paul D'Abbraccio
Rhode Island Exercise Planner
Rhode Island Emergency Management Agency
State Radiological Safety Officer
645 New London Avenue
Cranston, Rhode Island, 02920
401-751-1516
PDAbbraccio@gov.state.ri.us

Fran DeNicola
Lead Planner
MEMA
MEMA State Planner
400 Worcester Rd
Framingham, Massachusetts, 01702
508-820-2049
Fran.Denicola@state.ma.us

1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Pilgrim Nuclear Power Station exercise:

State Jurisdictions

- Commonwealth of Massachusetts
- Mass Correction Institute-Plymouth
- Massachusetts Department of Agricultural Resources
- Massachusetts Department of Corrections (DOC)
- Massachusetts Department of Environmental Protection
- Massachusetts Department of Fish and Game, Division of Fisheries and Wildlife

Massachusetts Department of Mental Health (MDMH)
Massachusetts Department of Public Health (MDPH)
Massachusetts Department of Public Health (MDPH), Radiation Control Program
Massachusetts Department of Transportation (Mass DOT)
Massachusetts Emergency Management Agency (MEMA)
Massachusetts Executive Office of Public Safety
Massachusetts National Guard (MNG)
Massachusetts State Police (MSP)
Office of the Secretary of the Commonwealth of Massachusetts
State of Rhode Island
Rhode Island Department of Environmental Management (DEM)
Rhode Island Department of Health Food Health Davison
Rhode Island Department of Health, Water Quality Division
Rhode Island Department of Health (RIDH)
Rhode Island Emergency Management Agency (RIEMA)
Rhode Island Governor's Office
Rhode Island National Guard
Rhode Island National Guard 13th - Civil Support Team
Rhode Island State Police (RISP)

Risk Jurisdictions

Carver Council on Aging
Carver Department of Public Works
Carver Emergency Management Agency
Carver Emergency Medical Services
Carver Fire Department
Carver Police Department
Carver School District
Carver Selectman
Carver Town Clerk's Office
Duxbury Council on Aging
Duxbury Emergency Management
Duxbury Emergency Medical Services
Duxbury Fire Department
Duxbury Police Department

Duxbury Public Information
Duxbury Public Works Department
Duxbury School Department
Duxbury Selectmen
Duxbury Shelters
Duxbury Town Administrator
Kingston Board of Selectmen
Kingston Emergency Management
Kingston Fire
Kingston Police
Kingston Streets, Trees and Parks
Kingston, Silver Lake School District
Marshfield Board of Health
Marshfield Board of Selectmen
Marshfield Council on Aging
Marshfield Emergency Management Agency
Marshfield Fire
Marshfield Harbormaster
Marshfield Police
Marshfield Public Schools
Marshfield Public Works
Marshfield Sheriff's Department
Marshfield Town Administrator
Marshfield Transportation
Plymouth Board of Health
Plymouth Board of Selectmen
Plymouth Communications
Plymouth County Sheriff's Department
Plymouth Department of Public Works
Plymouth Emergency Management Agency
Plymouth Fire Department
Plymouth Harbor Master
Plymouth Police Department
Plymouth Public Information

Plymouth Radiological Officer
Plymouth School Department
Plymouth Shelters
Plymouth Special Needs
Plymouth Special Populations
Plymouth Town Manager
Plymouth Transportation

Support Jurisdictions

Braintree Department of Public Works
Braintree Emergency Management Agency
Braintree Mayor's Office
Braintree Police Department
Braintree School District
Bridgewater Fire Department
Bridgewater Health Department
Bridgewater Highway Department
Bridgewater Police Department
Bridgewater Selectmen
Bridgewater State University
American Medical Response (AMR) Company
Caritas Good Samaritan Medical Center

Private Organizations

Braintree American Red Cross (ARC)
Braintree Radio Amateur Civil Emergency Service (RACES)
Carver Radio Amateur Civil Emergency Service (RACES)
Duxbury Radio Amateur Civil Emergency Service (RACES)
Entergy, Pilgrim Nuclear Power Station
Marshfield Radio Amateur Civil Emergency Service (RACES)
Mass 2-1-1
Massachusetts Bay Chapter American Red Cross (ARC)
Massasoit Radio Amateur Civil Emergency Service (RACES)
Plymouth Radio Amateur Civil Emergency Service (RACES)
United Way

Federal Jurisdictions

Federal Emergency Management Agency (FEMA)
Federal Radiological Monitoring & Assessment Center (FRMAC) Advance Party
Federal Radiological Monitoring & Assessment Center (FRMAC) Advisory Team
United State Coast Guard (USCG)

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

DESIGN:

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

This Exercise Plan (ExPlan) was produced at the direction of the MEMA and RIEMA with the input, advice, and assistance of the EPT. The 2010 Pilgrim Graded Ingestion Exercise is evidence of the growing partnership between State and local jurisdictions for response to the threats our Nation and communities face.

PURPOSE:

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

The objective of MEMA, RIEMA, and Entergy is to demonstrate reasonable assurance that the public can be protected during a nuclear power plant emergency.

2.2 Exercise Objectives, Capabilities and Activities

Target Capabilities:

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

The capabilities listed below have been selected by the EPT planning team for demonstration during the exercise. These capabilities provide the foundation for development of the exercise objectives and scenario, as the purpose of this exercise is to measure and validate performance of these capabilities and their associated critical tasks. However, the UTL and TCL does not replace the NUREG-0654 evaluation criteria which are used to evaluate off-site response capabilities.

- Emergency Operations Center Management
- Emergency Public Information and Warning
- Weapons of Mass Destruction (WMD) and Hazardous Materials (HazMat) Response and Decontamination
- Emergency Triage and Pre-Hospital Treatment
- Citizen Evacuation and Shelter-in-Place

2.3 Scenario Summary

The exercise scenario was developed to evaluate the response of the exercise participants to a radiological emergency.

The scenario is included in Appendix D, Exercise Plan.

SECTION 3: ANALYSIS OF CAPABILITIES

3.1 Exercise Evaluation and Results

3.2 Summary Results of Exercise Evaluation

Table 3.1 - Summary of Exercise Evaluation (4 pages)

DATE: 2010-11-17 SITE: Pilgrim Nuclear Power Station, MA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		MA SEOC	MA211	MA RIJ EOC	MA PNPS EOF	MA PNPS FMT-1	MA PNPS FMT-2	MA PNPS JIC	Carver EOC	Duxbury EOC	Kingston MA EOC	Marshfield EOC
Emergency Operations Management												
Mobilization	1a1	M		M	M	M	M	M	M	M	M	M
Facilities	1b1											
Direction and Control	1c1	M		M	M			M	M	A	M	M
Communications Equipment	1d1	M	M	M	M	M	M	M	M	M	M	M
Equip & Supplies to support operations	1e1	M	M	M	M	M	M	M	M	M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1	M										
Radiological Assessment and PARs	2b1	M			M							
Decisions for the Plume Phase -PADs	2b2	M										
PADs for protection of special populations	2c1	M		M								
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1				M							
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1	M										
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1			M		M	M	M	M	M	M	M
Implementation of KI decision	3b1			M	M	M	M	M	M	M	M	M
Implementation of protective actions for special populations - EOCs	3c1	M		M					M	M	M	M
Implementation of protective actions for Schools	3c2			M					M	M	M	M
Implementation of traffic and access control	3d1	M							M	M	M	M
Impediments to evacuation are identified and resolved	3d2	M							M	M	M	M
Implementation of ingestion pathway decisions - availability/use of info	3e1	M										
Materials for Ingestion Pathway PADs are available	3e2	M										
Implementation of relocation, re-entry, and return decisions.	3f1	M										
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1					M	M					
Field Teams obtain sufficient information	4a2				M	M	M					
Field Teams Manage Sample Collection Appropriately	4a3					M	M					
Post plume phase field measurements and sampling	4b1					M	M					
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1	M							M	M	M	M
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1	A	M					M	M	M	M	M
Emergency Worker Monitoring/Decontamination	6											
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1											
Mon / decon of emergency worker equipment	6b1											
Temporary care of evacuees	6c1											
Transportation and treatment of contaminated injured individuals	6d1											

Table 3.1 - Summary of Exercise Evaluation (Continued, page 2/4)

DATE: 2010-11-17 SITE: Pilgrim Nuclear Power Station, MA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Plymouth EOC	Braintree EOC	Bridgewater EOC	Taunton EOC	RI SEOC	RI FST-1	RI FST-2	RI FST-3	RI JIC	AMR Ambulance Company	Good Samaritan MS-1 Hospital
Emergency Operations Management												
Mobilization	1a1	M	M	M	M	M	M	M		M		
Facilities	1b1					M				M		
Direction and Control	1c1	M	M	M		M				M		
Communications Equipment	1d1	M	M	M		M	M	M		M		
Equip & Supplies to support operations	1e1	M	M	M		M	P	M	M	M		
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											
Radiological Assessment and PARs	2b1											
Decisions for the Plume Phase -PADs	2b2											
PADs for protection of special populations	2c1											
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1					M						
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1	M					M	M	M			M
Implementation of KI decision	3b1	M										
Implementation of protective actions for special populations - EOCs	3c1	M	M	M								
Implementation of protective actions for Schools	3c2	M										
Implementation of traffic and access control	3d1	M	M	M		M						
Impediments to evacuation are identified and resolved	3d2	M	M	M								
Implementation of ingestion pathway decisions - availability/use of info	3e1					M						
Materials for Ingestion Pathway PADs are available	3e2					M						
Implementation of relocation, re-entry, and return decisions	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1											
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3											
Post plume phase field measurements and sampling	4b1						M	A				
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1	M										
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1	M	M	M						M		
Emergency Worker Monitoring/Decontamination	6											
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1								M			
Mon / decon of emergency worker equipment	6b1								M			

Table 3.1 - Summary of Exercise Evaluation (Continued, page 3/4)

DATE: 2010-11-17 SITE: Pilgrim Nuclear Power Station, MA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Bay Path	Bright Ideas	Berry Brook	Camp Clark- Pilgrim	Discover- Pilgrim	Hedge	Indian Brook	Manomet	Newfield- Pilgrim	Mt. Pleasant	Pilgrim Preschool
Emergency Operations Management												
Mobilization	1a1											
Facilities	1b1											
Direction and Control	1c1											
Communications Equipment	1d1											
Equip & Supplies to support operations	1e1											
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1											
Radiological Assessment and PARs	2b1											
Decisions for the Plume Phase -PADs	2b2											
PADs for protection of special populations	2c1											
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1											
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1											
Protective Action Implementation												
Implementation of emergency worker exposure control	3a1											
Implementation of KI decision	3b1	M	M	M	M	M	M	M	M	M	M	M
Implementation of protective actions for special populations - EOCs	3c1	M								M		
Implementation of protective actions for Schools	3c2		M	M	M	M	M	M	M		M	M
Implementation of traffic and access control	3d1											
Impediments to evacuation are identified and resolved	3d2											
Implementation of ingestion pathway decisions - availability/use of info	3e1											
Materials for Ingestion Pathway PADs are available	3e2											
Implementation of relocation, re-entry, and return decisions.	3f1											
Field Measurement and Analysis												
Adequate Equipment for Plume Phase Field Measurements	4a1											
Field Teams obtain sufficient information	4a2											
Field Teams Manage Sample Collection Appropriately	4a3											
Post plume phase field measurements and sampling	4b1											
Laboratory operations	4c1											
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1											
Activation of the prompt alert and notification system - Fast Breaker	5a2											
Activation of the prompt alert and notification system - Exception areas	5a3											
Emergency information and instructions for the public and the media	5b1											
Emergency Worker Monitoring/Decontamination	6											
Support Operations/Facilities												
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1											
Mon / decon of emergency worker equipment	6b1											
Temporary care of evacuees	6c1											
Transportation and treatment of contaminated injured individuals	6d1											

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

DATE: 2010-11-17 SITE: Pilgrim Nuclear Power Station, MA M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		P. H. - Pilgrim	West	Sacred Heart HS	Sacred Heart Elem	Sacred Heart ECC	Radius- Pilgrim	Prov. House- Pilgrim	Plymouth N- HS	Plymouth Intermediate	Life Care
	Emergency Operations Management										
Mobilization	1a1										
Facilities	1b1										
Direction and Control	1c1										
Communications Equipment	1d1										
Equip & Supplies to support operations	1e1										
Protective Action Decision Making											
Emergency Worker Exposure Control	2a1										
Radiological Assessment and PARs	2b1										
Decisions for the Plume Phase -PADs	2b2										
PADs for protection of special populations	2c1										
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1										
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1										
Protective Action Implementation											
Implementation of emergency worker exposure control	3a1										
Implementation of KI decision	3b1	M	M	M	M	M	M	M	M	M	M
Implementation of protective actions for special populations - EOCs	3c1	M					M	M			M
Implementation of protective actions for Schools	3c2		M	M	M	M			M	M	
Implementation of traffic and access control	3d1										
Impediments to evacuation are identified and resolved	3d2										
Implementation of ingestion pathway decisions - availability/use of info	3e1										
Materials for Ingestion Pathway PADs are available	3e2										
Implementation of relocation, re-entry, and return decisions.	3f1										
Field Measurement and Analysis											
Adequate Equipment for Plume Phase Field Measurements	4a1										
Field Teams obtain sufficient information	4a2										
Field Teams Manage Sample Collection Appropriately	4a3										
Post plume phase field measurements and sampling	4b1										
Laboratory operations	4c1										
Emergency Notification and Public Info											
Activation of the prompt alert and notification system	5a1										
Activation of the prompt alert and notification system - Fast Breaker	5a2										
Activation of the prompt alert and notification system - Exception areas	5a3										
Emergency information and instructions for the public and the media	5b1										
Emergency Worker Monitoring/Decontamination	6										
Support Operations/Facilities											
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1										
Mon / decon of emergency worker equipment	6b1										
Temporary care of evacuees	6c1										
Transportation and treatment of contaminated injured individuals	6d1										

3.3 Criteria Evaluation Summaries

3.3.1 Massachusetts Jurisdictions

3.3.1.1 Massachusetts State Emergency Operations Center

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

ISSUE NO.: 48-10-5b1-A-01

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

CONDITION: At the General Emergency (GE) Emergency Classification Level (ECL), the Massachusetts Public Information staff at the Massachusetts Emergency Operations Center (EOC) failed to disseminate an appropriate News Release supporting the Pilgrim Emergency Action Directives authorized by the Massachusetts Emergency Management Agency Director at 1245 and 1303 that correspond to Emergency Alert System (EAS) Messages Numbers 2 and 3, with a sense of urgency and without undo delay.

At 1248, EAS Message Number 2 was signed by the Massachusetts Emergency Management Director and at 1303 that message was broadcast from the EOC Communications Room. This directed an evacuation of subareas 1,2,3,4 and 12 and Sheltering-In-Place for subareas 5,6,7,8,9,10 and 11. Because of the time constraints of the EAS system, detailed instructions and descriptions of subareas were not included. At 1304, EAS Message Number 3 was signed by the Director changing the above recommendations to an evacuation of subareas 1,2,3,4,5,6,11 and 12, thus adding subareas 5,6 and 11 to the evacuation directive and removing them from the Shelter-In-Place directive. This change was given to the Communications Room staff at 1309 and was encoded into the EAS system and transmitted at 1316.

The Massachusetts News Release that contained detailed information and the

descriptions of the affected areas, plus further critical information for the public, was delayed at the EOC and not distributed to the JIC for release to the media and the public, until 1400, 44 minutes after the EAS broadcast.

At 1304 and 1330 the State Public Information Officer (PIO) at the Joint Information Center (JIC) did conduct two verbal media briefings. While these briefings did provide supplemental information, they do not substitute for a written and widely distributed news release.

POSSIBLE CAUSE: The news release containing critical protective action information was not written, approved and released in a timely manner. A decision was made to include an embargo of food in the 10 mile Emergency Planning Zone in the Emergency Action Directives and the subsequent decision to not authorize a News Release until embargo information was included delayed, unduly critical information on evacuation, sheltering, and the ingestion of potassium iodide.

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

MAREP Rev. 14, 4.3.2

MAREP Rev. 12 Section 12.4

EFFECT: Critical information concerning the physical descriptions of the subareas, essential items the public should take with them in an evacuation, instructions for sheltering in place, and the recommendation from the Commissioner of Public Health for the ingestion of potassium iodide for the general public and institutionalized individuals was not done in a timely manner.

RECOMMENDATION: Ensure all staff at the EOC and JIC are aware of the time sensitive nature of critical information contained in news releases following protective action recommendations and EAS activations. We recommend that this criterion be redemonstrated during the Vermont Yankee Combined Functional Drill (CFD 1) on March 8-9, 2011.

- c. DEFICIENCY: None
- d. PLAN ISSUES: None

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

3.3.1.2 MA 211 Center

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

3.3.1.3 MA Region II EOC

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

3.3.1.4 MA (PNPS) Emergency Operations Facility

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

3.3.1.5 MA (PNPS) Field Monitoring Team-1

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

3.3.1.6 MA (PNPS) Field Motoring Team-2

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

3.3.1.7 MA (PNPS) Joint Information Center

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

3.3.2 Risk Jurisdictions

3.3.2.1 Carver Local EOC

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

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

3.3.2.2 Duxbury Local EOC

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

ISSUE NO.: 48-10-1c1-A-02

CRITERION: Key personnel with functional roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible.

CONDITION: The Duxbury Emergency Management Director (EMD) injected a non-scenario event involving a bridge closure for an evacuation route to support evacuees from Sub-area 4 without prior coordination with the MEMA Controller and the impacted jurisdictions of Plymouth and Marshfield. The areas affected by the simulated closure of Powder Point Bridge are Duxbury Beach, Gurnet Point, Saquish Neck and Clark's Island. By the time the controller was aware of the inject, operations and the other jurisdictions had already been notified and, in his estimation, was too far gone to stop.

POSSIBLE CAUSE: The EMA's stated intent was to draw attention to the complex arrangement whereby Duxbury historically responds to emergency events in the affected areas which are under the jurisdiction of both Plymouth and Duxbury. The current arrangement is conducted under a Memorandum of Agreement between the jurisdictions. Controller training may not have adequately covered how to address scenario variances.

REFERENCE: NUREG-0654, A.1.d and Pilgrim Exercise Plan, 2010-10-19

EFFECT: The unplanned action to simulate the closure of the bridge departed from the approved exercise scenario and resulted in additional work for the EOC staff that was involved with actions to support the ongoing exercise. Additionally, the neighboring jurisdictions of Plymouth and Marshfield were also distracted by calls to simulate siren activation and route alerting to notify residents of the bridge closure and to establish traffic control points. In summary, the action distracted from an

otherwise effective operation; however, the Plymouth and Marshfield response to the bridge closure inject were timely and effective.

RECOMMENDATION: Ensure the EMD is made aware of the proper discipline and controls necessary for an exercise and to assure future operations do not deviate from the scenario and extent of play. Should there be a need for similar events in future exercises, the input should be properly presented to MEMA and FEMA at the exercise planning conferences.

Controller training should cover methods to address scenario variances.

- c. DEFICIENCY: None
- d. PLAN ISSUES: None
- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: 1.c.1.

ISSUE NO.: 48-08-1c1-A-01

ISSUE: The Duxbury Selectmen and Emergency Management Director (EMD) failed to ensure that an observer of the exercise did not interfere with exercise activities as required by FEMA rules. An observer of the Duxbury Emergency Operations Center (EOC) was allowed to interact extensively with the Selectmen during the exercise and influenced decisions

CORRECTIVE ACTION DEMONSTRATED: The EMD demonstrated strong direction and control measures throughout the event and there were no distractions created by visitors or observers.

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.3 Kingston MA Local EOC

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

- e. NOT DEMONSTRATED: None
- f. PRIOR ISSUES - RESOLVED: 3.a.1, 3.c.2.

ISSUE NO.: 48-08-3a1-A-02

ISSUE: The Radiological Liaison Dosimetry Coordinator (RLDC) at the Kingston Emergency Operations Center (EOC) did not properly conduct a radiological briefing for emergency workers and did not provide dosimeters that were ready for use. The RLDC was given on the spot training, and the briefing was re-demonstrated to emergency workers within the EOC. The revised radiological briefing, although improved, still contained errors of omission. The Direct Reading Dosimeters provided were not set at zero. Within the EOC, the reading of dosimeters in 15 minute increments was sporadic.

CORRECTIVE ACTION DEMONSTRATED: The Radiological Officer/Dosimetry Coordinator (RODC) gave a thorough radiological briefing to the emergency workers and explained the procedures for recording and monitoring the dosimeters'. The RODC calibrated the dosimeters prior to issuing and read the Dosimetry Instruction Briefing Card to the five Emergency Workers.

ISSUE NO.: 48-08-3c2-A-03

ISSUE: The Kingston Elementary School and the Kingston Intermediate School students and staff were not relocated to Bridgewater as a precautionary measure.

CORRECTIVE ACTION DEMONSTRATED: At the Kingston EOC, representatives for the Kingston School Superintendent's Office were presented and worked with the State School EOC representative to coordinate and notify all schools and day cares of current events. The two representatives for the Kingston School Superintendent's Office both had check off sheets/list and worked together as a team in keeping the other person informed as to the action and steps taken. As a result, all schools were informed, notified and relocated in a timely manner.

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- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.4 Marshfield Local EOC

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

3.3.2.5 Plymouth Local EOC

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

ISSUE NO.: 48-08-5a1-A-04

ISSUE: State notification to sound sirens at the Site Area Emergency was not acted upon in a timely manner at the Plymouth Emergency Operations Center (EOC). Activation directed to occur at 1035 did not take place (simulated) until 1050.

CORRECTIVE ACTION DEMONSTRATED: Through simulation, the Emergency Management Director successfully demonstrated actions to disseminate the appropriate information/instructions in a timely manner to the public through the voice-over component of the siren system. Per the direction of the Emergency Management Director, the Fire Department activated the voice-over system for Sirens 38 and 39 from Fire Station One. The voice-over system gave residents in Sub-Area Four advance notice of the emergency situation at Pilgrim Nuclear Power Station.

- g. PRIOR ISSUES - UNRESOLVED: None

3.3.2.6 Bay Path Nursing Home

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

3.3.2.7 Bright Ideas Preschool

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

3.3.2.8 Berry Brook Preschool

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

3.3.2.9 Camp Clark

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

3.3.2.10 Discover Corner Daycare

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

3.3.2.11 Hedge Elementary School

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

3.3.2.12 Indian Brook Elementary School

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

3.3.2.13 Manomet Elementary School

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

3.3.2.14 Newfield House

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

3.3.2.15 Mt. Pleasant Elementary School

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

3.3.2.16 Pilgrim Childcare and Preschool

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

3.3.2.17 Pilgrim's Hope

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

3.3.2.18 West Elementary School

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

3.3.2.19 Sacred Heart High School

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

3.3.2.20 Sacred Heart Elementary School

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

3.3.2.21 Sacred Heart Early Childhood Center

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

3.3.2.22 Radius Health Care

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

3.3.2.23 Providence House

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

3.3.2.24 Plymouth North High School

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

3.3.2.25 Plymouth Community Intermediate School

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

3.3.2.26 Life Care Center

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

3.3.3 Support Jurisdictions

3.3.3.1 Braintree Local EOC

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

3.3.3.2 Bridgewater Local EOC

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

3.3.3.3 Taunton Local EOC

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

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

3.3.3.4 American Medical Response Ambulance Company

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

3.3.3.5 Caritas Good Samaritan Medical Center

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

3.3.4 Rhode Island Jurisdictions

3.3.4.1 RI State Emergency Operations Center

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

3.3.4.2 RI Field Sampling Team-1

- a. MET: 1.a.1, 1.d.1, 3.a.1, 4.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. PLAN ISSUES: 1.e.1.

ISSUE NO.: 48-10-1e1-P-04

CRITERION: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operations.

CONDITION: Plan contains how to perform the operability check on the CDV-718 radiological instrument but do not require the meter to be source checked. The specific Dosimetry Coordinator assigned to this exercise was aware of the need to source check the CDV-718, which was completed successfully. This inadequacy is applicable to all Rhode Island Field Sampling Teams.

POSSIBLE CAUSE: Procedure inadequacy

REFERENCE: NUREG-0654, H.7,10; J.10.a, b, e, J.11; K.3.a
Rhode Island Emergency Management Agency Radiological Emergency Plan,
Appendix B-7, "RIEMA Dosimetry Coordinator"

EFFECT: Dosimetry briefing may not contain instructions to source check CDV-718, if not completed successfully, meter may not be functional and provide erroneous readings.

RECOMMENDATION: Revise procedure to include instructions for source check of CDV-718

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

3.3.4.3 RI Field Sampling Team-2

- a. MET: 1.a.1, 1.d.1, 1.e.1, 3.a.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 4.b.1.

ISSUE NO.: 48-10-4b1-A-05

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

CONDITION: During the ingestion pathway exercise, the Rhode Island State Police for Field Sampling Team 2 was unsure as to how and when to perform a background radiation check at the sample location. The State of Rhode Island Ingestion Pathway Plan, Appendix H, 'Field Team Sampling Procedure', states that a background check will be performed at each sample location prior to exiting the vehicle. If background is greater than 10 times that of the assembly point, the Field Sampling Team Coordinator must be contacted for further instructions before proceeding with sample collection. This survey was not initially performed. The Controller proceeded to explain the use of the CD V-718 survey meter and demonstrated its proper use. The State Police Officer then performed a survey and correctly re-demonstrated the use of the meter.

The requirement to perform the background check was listed under the responsibility of the Field Sampling Team Leader. The Rhode Island State Police, in accordance with Appendix H of the Plan, served as the Field Sampling Team Leader for Field Sampling Team 2 during this exercise. The Officer stated that the only survey method for which training was received was to open the window of the survey meter and hang the probe out the window. However, Appendix H, Table H-3, 'Beta-Gamma Exposure Rate Log', has blanks for waist level (window open and window closed readings) and ground level (window open and window closed readings). Waist level readings are not necessary in post-plume evaluations. The State Police Officer was not aware of this log or the method to correctly complete this log.

POSSIBLE CAUSE: The Evaluator for Field Sampling Team 1 was told by the

Rhode Island State Police Officer that the training given on the use of the survey meter, procedures, and radiological hazards was not adequate and that the Officer was not comfortable with the assignment. In addition, the lack of training and experience to serve as the Field Sampling Team Leader and lack of familiarity with the 'Beta-Gamma Exposure Rate Log' compounded this problem.

REFERENCE: NUREG-0654, I.8., J.11

State of Rhode Island Radiological Emergency Response Plan for the Ingestion Exposure Pathway, Appendix H, 'Field Team Sampling Procedure'

EFFECT: Without adequate survey results, erroneous readings could have been provided, which would result in the Field Sampling Teams being located in a radiation area greater than allowed by the Field Sampling Team Coordinator. This could result in exposures to the team members greater than anticipated, as well as an inaccurate estimation of offsite exposure levels that could be used in making protective action decisions.

RECOMMENDATION: Ensure that adequate instrumentation, radiological hazard, and applicable procedure training is provided to personnel who are responsible for performing radiation surveys and who are responsible for serving as the Field Sampling Team Leader. Determine the use of the 'Beta-Gamma Exposure Rate Log' and ensure that only necessary readings are included on the form. Ensure that personnel responsible for performing radiation surveys are familiar with the use of the log.

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

3.3.4.4 RI Field Sampling Team-3

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

3.3.4.5 RI Joint Information Center

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

SECTION 4: CONCLUSION

The Commonwealth of Massachusetts, State of Rhode Island, 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 were no Deficiencies. There were four Areas Requiring Corrective Action (ARCA) identified.

There were also four prior ARCAs open from the 2008 Plume Exercise. These ARCAs were redemonstrated correctly during the 2010 Plume and Post Plume Exercise and closed

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 48-10-1c1-A-02		Criterion: 1c1	
<p>ISSUE: The Duxbury Emergency Management Director (EMD) injected a non-scenario event involving a bridge closure for an evacuation route to support evacuees from Sub-area 4 without prior coordination with the MEMA Controller and the impacted jurisdictions of Plymouth and Marshfield. The areas affected by the simulated closure of Powder Point Bridge are Duxbury Beach, Gurnet Point, Saquish Neck and Clark's Island. By the time the controller was aware of the inject, operations and the other jurisdictions had already been notified and, in his estimation, was too far gone to stop.</p>			
<p>RECOMMENDATION: Ensure the EMD is made aware of the proper discipline and controls necessary for an exercise and to assure future operations do not deviate from the scenario and extent of play. Should there be a need for similar events in future exercises, the input should be properly presented to MEMA and FEMA at the exercise planning conferences.</p> <p>Controller training should cover methods to address scenario variances.</p>			
<p>CORRECTIVE ACTION DESCRIPTION:</p>			
CAPABILITY:		PRIMARY RESPONSIBLE AGENCY:	
CAPABILITY ELEMENT:		START DATE:	
AGENCY POC:		ESTIMATED COMPLETION DATE:	

Issue Number: 48-10-5b1-A-01 **Criterion: 5b1**

ISSUE: At the General Emergency (GE) Emergency Classification Level (ECL), the Massachusetts Public Information staff at the Massachusetts Emergency Operations Center (EOC) failed to disseminate an appropriate News Release supporting the Pilgrim Emergency Action Directives authorized by the Massachusetts Emergency Management Agency Director at 1245 and 1303 that correspond to Emergency Alert System (EAS) Messages Numbers 2 and 3, with a sense of urgency and without undo delay.

At 1248, EAS Message Number 2 was signed by the Massachusetts Emergency Management Director and at 1303 that message was broadcast from the EOC Communications Room. This directed an evacuation of subareas 1,2,3,4 and 12 and Sheltering-In-Place for subareas 5,6,7,8,9,10 and 11. Because of the time constraints of the EAS system, detailed instructions and descriptions of subareas were not included. At 1304, EAS Message Number 3 was signed by the Director changing the above recommendations to an evacuation of subareas 1,2,3,4,5,6,11 and 12, thus adding subareas 5,6 and 11 to the evacuation directive and removing them from the Shelter-In-Place directive. This change was given to the Communications Room staff at 1309 and was encoded into the EAS system and transmitted at 1316.

The Massachusetts News Release that contained detailed information and the descriptions of the affected areas, plus further critical information for the public, was delayed at the EOC and not distributed to the JIC for release to the media and the public, until 1400, 44 minutes after the EAS broadcast.

At 1304 and 1330 the State Public Information Officer (PIO) at the Joint Information Center (JIC) did conduct two verbal media briefings. While these briefings did provide supplemental information, they do not substitute for a written and widely distributed news release.

RECOMMENDATION: Ensure all staff at the EOC and JIC are aware of the time sensitive nature of critical information contained in news releases following protective action recommendations and EAS activations. We recommend that this criterion be redemonstrated during the Vermont Yankee Combined Functional Drill (CFD 1) on March 8-9, 2011.

CORRECTIVE ACTION DESCRIPTION:

CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 48-10-1e1-P-04 **Criterion: 1e1**

ISSUE: Plan contains how to perform the operability check on the CDV-718 radiological instrument but do not require the meter to be source checked. The specific Dosimetry Coordinator assigned to this exercise was aware of the need to source check the CDV-718, which was completed successfully. This inadequacy is applicable to all Rhode Island Field Sampling Teams.

RECOMMENDATION: Revise procedure to include instructions for source check of CDV-718

CORRECTIVE ACTION DESCRIPTION:

CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 48-10-4b1-A-05 **Criterion: 4b1**

ISSUE: During the ingestion pathway exercise, the Rhode Island State Police for Field Sampling Team 2 was unsure as to how and when to perform a background radiation check at the sample location. The State of Rhode Island Ingestion Pathway Plan, Appendix H, 'Field Team Sampling Procedure', states that a background check will be performed at each sample location prior to exiting the vehicle. If background is greater than 10 times that of the assembly point, the Field Sampling Team Coordinator must be contacted for further instructions before proceeding with sample collection. This survey was not initially performed. The Controller proceeded to explain the use of the CD V-718 survey meter and demonstrated its proper use. The State Police Officer then performed a survey and correctly re-demonstrated the use of the meter.

The requirement to perform the background check was listed under the responsibility of the Field Sampling Team Leader. The Rhode Island State Police, in accordance with Appendix H of the Plan, served as the Field Sampling Team Leader for Field Sampling Team 2 during this exercise. The Officer stated that the only survey method for which training was received was to open the window of the survey meter and hang the probe out the window. However, Appendix H, Table H-3, 'Beta-Gamma Exposure Rate Log', has blanks for waist level (window open and window closed readings) and ground level (window open and window closed readings). Waist level readings are not necessary in post-plume evaluations. The State Police Officer was not aware of this log or the method to correctly complete this log.

RECOMMENDATION: Ensure that adequate instrumentation, radiological hazard, and applicable procedure training is provided to personnel who are responsible for performing radiation surveys and who are responsible for serving as the Field Sampling Team Leader. Determine the use of the 'Beta-Gamma Exposure Rate Log' and ensure that only necessary readings are included on the form. Ensure that personnel responsible for performing radiation surveys are familiar with the use of the log.

CORRECTIVE ACTION DESCRIPTION:

CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

APPENDIX B: EXERCISE TIMELINE

Table 1 - Exercise Timeline

DATE: 2010-11-17, SITE: Pilgrim Nuclear Power Station, MA

Emergency Classification Level or Event	Time Utility Declared	MA SEOC	MA RIEOC	MA PNBS EOC	MA PNBS JIC	Carver EOC	Duxbury EOC
Unusual Event	NA	NA	NA	NA	NA	NA	NA
Alert	0825	0834	0834	0843	0832	0834	0840
Site Area Emergency	1009	1015	1024	1009	1013	1023	1020
General Emergency	1226	1232	1231	1226	1228	1235	1236
Simulated Rad. Release Started	1212	1232	1231	1212	1224	1231	1236
Simulated Rad. Release Terminated	1340	1345	NA	1340	NA	NA	NA
Facility Declared Activated		0840	0841	0909	0850	0835	0900
Facility Declared Operational		0851	0847	0909	0950	0857	0900
Declaration of Emergency: State		1016	1016	1039	1036	1129	1020
Declaration of Emergency: Local		NA	NA	NA	NA	0900	0943
Exercise Terminated		1357	1355	1345	1337	1358	1355
Early Precautionary Actions: Close Parks and Beaches		1012	1017	1017	1036	1052	1032
Early Precautionary Actions: School Transfers		1012	1017	1017	1036	1033	1032
Early Precautionary Actions: Shelter Livestock		1012	1017	1017	1036	1035	1032
EAS "Heads Up" Message or 1st Protective Action Decision		1012	1012	1012	1012	1012	1012
1st Siren Activation		1030	1030	1030	1030	1030	1030
1st EAS Message		1041	1041	1041	1041	1041	1041
2nd Protective Action Decision:		1246	1346	1246	1246	1246	1246
2nd Siren Activation		1300	1300	1300	1300	1300	1300
2nd EAS Message		1303	1303	1303	1303	1303	1303
3rd Protective Action Decision:		1305	1305	1305	1305	1305	1305
3rd Siren Activation		NA	NA	NA	NA	NA	NA
3rd EAS Message		1316	1316	1316	1316	1316	1316
KI Administration Decision:		1246	1246	1246	1246	1246	1246

Table 1 - Exercise Timeline
DATE: 2010-11-17, SITE: Pilgrim Nuclear Power Station, MA

Emergency Classification Level or Event	Time Utility Declared	Kingston, MA EOC	Marshfield EOC	Plymouth EOC	Braintree EOC	Bridgewater EOC
Unusual Event	NA	NA	NA	NA	NA	NA
Alert	0825	0834	0834	0834	0834	0838
Site Area Emergency	1009	1018	1020	1020	1020	1018
General Emergency	1226	1234	1232	1238	1232	1238
Simulated Rad. Release Started	1212	1226	1232	1226	1232	1238
Simulated Rad. Release Terminated	1340	NA	NA	1327	NA	NA
Facility Declared Activated		0839	0838	0847	0834	0855
Facility Declared Operational		0858	0915	0908	0914	0905
Declaration of Emergency: State		1030	1025	1139	1130	1042
Declaration of Emergency: Local		0924	1000	0908	0916	1117
Exercise Terminated		1400	1340	1355	1357	1355
Early Precautionary Actions: Close Parks and Beaches		0915	1028	1033	1033	NA
Early Precautionary Actions: School Transfers		1019	1028	1017	1033	1040
Early Precautionary Actions: Shelter Livestock		1030	1028	1033	1033	NA
EAS "Heads Up" Message or 1st Protective Action Decision		1012	1012	1012	1012	1012
1st Siren Activation		1030	1030	1030	1030	1030
1st EAS Message		1041	1041	1041	1041	1041
2nd Protective Action Decision:		1246	1246	1246	1246	1246
2nd Siren Activation		1300	1300	1300	1300	1300
2nd EAS Message		1303	1303	1303	1303	1303
3rd Protective Action Decision:		1305	1305	1305	1305	1305
3rd Siren Activation		NA	NA	NA	NA	NA
3rd EAS Message		1316	1316	1316	1316	1316
KI Administration Decision:		1246	1246	1246	1246	1246

APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Pilgrim Nuclear Power Station

DATE: 2010-11-17, SITE: Pilgrim Nuclear Power Station, MA

LOCATION	EVALUATOR	AGENCY
Massachusetts State Emergency Operations Center	Paul Anderson Johanna Berkey Gary Bolender Reggie Rodgers Barbara Thomas	FEMA - R9 FEMA R10 ICFI ICFI FEMA - RI
MA 211 Center	Helen LaForge	FEMA - RI
MA Region II EOC	*Linda Gee Roy Smith	FEMA R6 ICFI
MA (PNPS) Emergency Operations Facility	*Reggie Rodgers	ICFI
MA (PNPS) Field Monitoring Team-1	*Mike Howe	FEMA - HQ
MA (PNPS) Field Motoring Team-2	Jim Hickey	ICFI
MA (PNPS) Joint Information Center	*Don Carlton	FEMA - RI
RI State Emergency Operations Center	Bridget Ahlgrim *Robert Swartz	FEMA - HQ FEMA - RI
RI Field Sampling Team-1	*Marty Vyeniolo	FEMA - R3
RI Field Sampling Team-2	Jill Leatherman	ICFI
RI Field Sampling Team-3	Andrew Hower	FEMA - R3
RI Joint Information Center	Henry Christiansen	ICFI
Carver Local EOC	*Richard Echavarria Daryl Thome	FEMA - R9 ICFI
Duxbury Local EOC	Mark Dalton *David White	ICFI ICFI
Kingston MA Local EOC	John Arszulowicz *Richard Kinard Rosemary Samsel	FEMA HQ FEMA - R3 ICFI
Marshfield Local EOC	Marcy Campbell *Rebecca Fontenot Timothy Looby	ICFI FEMA - HQ FEMA - RI
Plymouth Local EOC	Lisa Hamilton Elizabeth Haney *Melissa Savilonis	FEMA HQ ICFI FEMA - RI
Bay Path Nursing Home	*Taneeka Hollins	FEMA - RI
Bright Ideas Preschool	*Taneeka Hollins	FEMA - RI
Berry Brook Preschool	*Taneeka Hollins	FEMA - RI
Camp Clark	*Taneeka Hollins	FEMA - RI
Discover Corner Daycare	*Taneeka Hollins	FEMA - RI
Hedge Elementary School	*Taneeka Hollins	FEMA - RI
Indian Brook Elementary School	*Taneeka Hollins	FEMA - RI
Manomet Elementary School	*Taneeka Hollins	FEMA - RI
Newfield House	*Taneeka Hollins	FEMA - RI
Mt. Pleasant Elementary School	*Taneeka Hollins	FEMA - RI
Pilgrim Childcare and Preschool	*Taneeka Hollins	FEMA - RI
Pilgrim's Hope	*Taneeka Hollins	FEMA - RI
West Elementary School	*Taneeka Hollins	FEMA - RI
Sacred Heart High School	*Taneeka Hollins	FEMA - RI
Sacred Heart Elementary School	*Taneeka Hollins	FEMA - RI
Sacred Heart Early Childhood Center	*Taneeka Hollins	FEMA - RI

Unclassified
Radiological Emergency Preparedness Program (REP)

After Action Report/Improvement Plan

Pilgrim Nuclear Power Station

Radius Health Care	*Taneeka Hollins	FEMA - RI
Providence House	*Taneeka Hollins	FEMA - RI
Plymouth North High School	*Taneeka Hollins	FEMA - RI
Plymouth Community Intermediate School	*Taneeka Hollins	FEMA - RI
Life Care Center	*Taneeka Hollins	FEMA - RI
Braintree Local EOC	*Timothy Pflieger Paul Ringheiser	FEMA - R6 ICFI
Bridgewater Local EOC	Karl Fippinger *Kim Wood	ICFI ICFI
Taunton Local EOC	Patricia Foster	FEMA - RI
American Medical Response Ambulance Company	*Taneeka Hollins	FEMA - RI
Caritas Good Samaritan Medical Center	*Taneeka Hollins	FEMA - RI
Team Leader		

APPENDIX D: EXERCISE PLAN

This appendix contains a summary of the simulated sequence of events used as the basis for invoking emergency response actions by OROs during the Pilgrim Nuclear Power Station plume/post plume exercise on November 16 & 17, 2010.

The scenario was approved by the Federal Emergency Management Agency (FEMA) Region I in September 2010. The summary presented in this appendix is a compilation of exercise scenario materials submitted by the Pilgrim Nuclear Power Station.

Events at the plant site that are not pertinent to the ORO response have been omitted.

**Pilgrim Nuclear Power Station
November 16th 2010 NRC/FEMA Evaluated Exercise – Plumé Portion**

NARRATIVE SUMMARY

Initial Conditions

It is November 16, 2010. The plant has been running for an extended full power run for the last 300 days. The 'C' Salt Service Water (SSW) pump is red tagged for bearing repair. The 'A' Average Power Range Monitor (APRM) is bypassed and I&C is investigating.

It is a partly cloudy day with seasonal temperatures. The wind is from the Northeast (45 degrees) at 5 to 10 MPH. Skies are expected to remain cloudy throughout the day. The temperature is 42 degrees.

Sequence of Events

The Exercise event starts with an earthquake sensed onsite. The Seismic Recorder Operating alarm is received in the Control Room accompanied by several spurious alarms. The operations crew will enter procedure PNPS 5.2.1 (Earthquake) to initiate appropriate actions for determining the magnitude of the earthquake and expected walk downs of the plant for damage. The reactor remains at power.

Initial reports from the field will include a report from Security that ground motion was felt at the Bullet Resistant Enclosures (BREs), overhead lights in the Aux Bay are arcing and a flammable liquid locker outside the Emergency Diesel Generator (EDG) Building was tipped over and 2-3 gallons of oily liquid has spilled. A broken wire on 'B' Squib valve will result in a Squib valve continuity alarm on the Simulator CR 905 panel.

Results of the plant seismic monitoring system will show that the ground motion from the earthquake exceeded the Alert entry condition (operating-basis earthquake) but not the Site Area Emergency entry condition (safe shutdown earthquake).

The Shift Manager (SM) will declare an **ALERT** based on Emergency Action Level 7.4.2.2 (An Earthquake onsite which has been determined to be greater than Operating Basis Earthquake 0.08g).

When the Alert is declared, the emergency response organization (ERO) is notified by activation of the Computerized Automated Notification System (CANS). Offsite notifications of the Alert declaration will be made to the Commonwealth and local towns by activation of the Dedicated Notification Network (DNN) computerized system. When sufficient ERO staff arrives at the Technical Support Center (TSC), the Operations Support Center (OSC), the Emergency Operations Facility (EOF), and the Joint Information Center (JIC), each facility will be activated.

Pilgrim Nuclear Power Station
November 16th 2010 NRC/FEMA Evaluated Exercise – Plume Portion

NARRATIVE SUMMARY

Sequence of Events (continued)

After the emergency response facilities are staffed and activated, a minor after-shock will cause an Emergency Diesel Generator (EDG) trouble alarm, and a Shutdown Transfer (SDT) alarm that the E-Lab will investigate. The EDG will have an oil leak on a flanged connection that can be repaired. Operators will continue to request TSC/OSC support with on-going event related work activities and walk down inspections of plant equipment for seismic-related damage. Plant field personnel will report that a hanger on the Turbine Closed Cooling Water (TBCCW) System has separated from its anchor and the public hydrant at the old gate house is leaking.

Approximately 2 hours and 5 minutes after the initiating event, another after-shock occurs that causes the Reactor Recirculation pumps to go to maximum speed and reactor power to exceed the automatic reactor scram signal but the reactor fails to scram on high reactor power. Operators will insert a manual scram but some of the control rods will not fully insert. An Anticipated Transient without Scram (ATWS) event has occurred. Enough rods will insert to lower reactor power to about 10 percent and Standby Liquid Control (SBLC) will be manually initiated to lower power. In addition to SBLC initiation, Emergency Operating Procedure (EOP-02) will direct the crew to utilize procedure PNPS 5.3.23 for alternate rod insertion. Alternative, and parallel, success paths include individual CRD insertion, closing of the CRD 25 valve, and multiple scrams, subsequent to bypassing Reactor Protection System (RPS) and Alternate Rod Insertion (ARI) logics per PNPS 5.3.23. Upon taking and completing these actions, the crew will be able to manually insert control rods to shutdown the reactor.

After the ATWS event, the EOF Emergency Director is expected to upgrade the event to a **SITE AREA EMERGENCY (SAE)** based on Emergency Action Level 2.3.1.3 (Reactor Power greater than 3 percent and boron injection into the reactor pressure vessel intentionally initiated).

While stabilizing the plant the Main Steam and Off-gas radiation monitors will alarm in response to reactor fuel cladding damage (gap activity) released into the reactor coolant from the power excursion sequence of events. The Main Steam Isolation Valves will be closed by operator action as per procedure PNPS 2.4.40.

Approximately 2 hours after the Site Area Emergency is declared, a final after-shock will cause a steam leak to occur in the "B" valve room downstream of the HPCI Steam Line Outboard Isolation Valve MO-2301-5. A steam leakage area hi-temp alarm annunciates in the CR Simulator indicating the leak.

Pilgrim Nuclear Power Station
November 16th 2010 NRC/FEMA Evaluated Exercise – Plume Portion

NARRATIVE SUMMARY

Sequence of Events (continued)

Operators will enter EOP-04 (Secondary Containment Control) due to high area temperature. Radiation levels in the Reactor Building will increase significantly due to the steam leak into the Reactor Building atmosphere.

The released airborne concentration in the Reactor Building is being exhausted through the Standby Gas Treatment (SBGT) system to the Main Stack and released to the environment. Main Stack and SBGT discharge radiation monitors will start to respond, and will indicate a release of radioactivity to the off-site environment.

Radiation levels on the Main Stack will rise as the secondary containment steam leak is exhausted through the Standby Gas Treatment System. The radiation levels from the steam leak will cause the Main Stack readings to exceed 10,000 cps for greater than 15 minutes. The CR Simulator crew will enter EOP-05 "Rad Release Control", and an emergency RPV depressurization will be required (EOP-17). However, radiation levels on the Main Stack will continue to rise and exceed the General Emergency threshold value of 240,000 counts per second (cps).

When Main Stack exceeds 240,000 cps, the EOF Emergency Director is expected to upgrade the event to a **GENERAL EMERGENCY** (GE) based on Emergency Action Level 5.1.1.4 (Valid Main Stack process radiation monitor reading greater than 2.4E5 cps).

At the time of declaring the General Emergency, the PNPS ERO will issue Protective Action Recommendations (PARs) to the appropriate Commonwealth of Massachusetts authorities located at the Emergency Operations Facility (EOF). The PAR will be based on plant conditions that should include evacuating the 2 mile ring surrounding the plant and 5 miles downwind in the affected sub-areas in the Emergency Planning Zone (EPZ); and sheltering all remaining sub-areas in the EPZ. This should include evacuating sub-areas 1, 2, 3 and 12 and sheltering sub-areas 4, 5, 6, 7, 8, 9, 10 and 11. In addition, a reminder is provided in the PAR that the Commonwealth of Massachusetts and local emergency authorities should consider the administration of Potassium Iodide (KI) for the general public in accordance with each authority's emergency plan and procedures.

Termination

After the General Emergency is declared, the exercise will be terminated when sufficient time has elapsed to allow appropriate objectives to be demonstrated or evaluated.

**Pilgrim Nuclear Power Station
November 16th 2010 NRC/FEMA Evaluated Exercise – Plume Portion**

ABBREVIATED SCENARIO TIMELINE

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
-00:30	0730	Controllers in Position.	
-00:25	0735	Initial conditions Established.	Simulator operating crew is briefed on the initial conditions. Controllers must provide this information to players when they arrive at each facility, especially the lead facility players.
00:00	0800	Exercise Commences	Controllers and players are in position. Scenario begins.
00:05	0805	Earthquake sensed onsite	The crew in the Control Room (Simulator) receives indications of an earthquake.
00:15	0815	Alert Declared	Shift Manager (SM) declares an ALERT per EAL 7.4.2.2 (An Earthquake onsite which has been determined to be greater than Operating Basis Earthquake - 0.08g)
00:25	0825	ERO Mobilization	The ERO should be mobilizing and activating Emergency Response Facilities. State and local offsite notifications will be initiated and made. During the ERO activation the plant may experience minor after-shocks.
01:20	0920	Facility Activation	TSC, OSC, and EOF should be activated. On-call Emergency Director takes over command and control of the emergency from the Shift Manager/Emergency Plant Operations Supervisor.
02:05	1005	Another after-shock occurs that causes the Recirc pumps to go to max speed and reactor power to exceed the automatic scram signal but fails to scram on high reactor power.	Operators notice that the reactor did not scram on high reactor power. Operators will insert a manual scram but some of the control rods will not fully insert.
02:10	1010	Anticipated Transient Without Scram (ATWS) with Rx Power about 10%.	Emergency Operations Procedure (EOP-02) will direct crew actions. Enough rods will insert to lower power to about 10%. Simulator response will require crew to initiate Standby Liquid Control (SBLC).
02:20	10:20	Site Area Emergency (SAE) Declared	After the ATWS event, the EOF will declare the SAE based on EAL 2.3.1.3 (Reactor Power > 3% and boron injection required).

*Elapsed Times and Actual Clock Times are approximations.

Pilgrim Nuclear Power Station
November 16th 2010 NRC/FEMA Evaluated Exercise – Plume Portion

ABBREVIATED SCENARIO TIMELINE

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
02:35	1035	Main Steam, and Off-gas Radiation Monitors alarm	Main Steam radiation levels are trending upward due to fuel failure occurring with this after-stock and the reactor power excursion sequence. PNPS Procedure 2.4.40 directs Main Steam Isolation Valve (MSIV) closure upon reaching High-High set point. Crew may isolate MSIVs before reaching set point.
03:30	1130	All Control Rods are inserted	The operator crew will be able to take alternate actions to manually insert control rods to shutdown the reactor.
04:05	1205	The final after-shock is felt	Indications will be observed at the onsite TSC and OSC emergency response facilities.
04:07	1207	Steam Leak located in the "B" Valve Room	Operators should determine that a steam leak has occurred in the "B" valve room located on the ground floor of the Reactor Building. The steam leak is associated with the failure of the HPCI Steam Line Outboard Isolation Valve (MO-2301-5).
04:10	1210	High Main Stack Radiation Levels.	Operators recognize High Main Stack Radiation.
04:25	1225	Steam leak worsens and continues to degrade. EOP-5 entry conditions.	Main Stack radiation levels start to rise significantly. Main stack radiation levels are above 10,000 cps for greater than 15 minutes and continue to increase.
04:35	1235	General Emergency (GE) Declared (Main Stack Radiation monitors exceed 2.4E5 cps)	When Main Stack exceeds 2.4E5 cps, the EOF will declare a GE based on EAL 5.1.1.4 (Valid Main Stack radiation monitor reading greater than 2.4E5 cps). Off-site Protective Action Recommendations should be formulated and issued with the General Emergency declaration.
06:00	1400	Exercise Termination	The Exercise is terminated when sufficient time has elapsed to allow appropriate objectives to be demonstrated or evaluated.

Pilgrim Nuclear Power Station
2010 Ingestion Pathway Evaluated Exercise

SCOPE

The scope of the 2010 Pilgrim Nuclear Power Station (PNPS) Ingestion Pathway Evaluated Exercise is focused on the activities of the State agencies responsible for determining and implementing post-radiological emergency measures during the post-plume phase of a simulated accident at the PNPS. The post-plume phase is the period beginning after releases of radioactive material have been brought under control and the period of deposition of radioactivity has ceased. This phase of a radiological emergency may take from weeks to many months to complete depending on the severity and extent of the release of radioactive material to the environment. Fully demonstrating this response is well beyond the scope of this exercise. However, the Commonwealth of Massachusetts and the State of Rhode Island will demonstrate key response actions and objectives based on the simulated deposition of radioactive material resulting from the off-site release and assumed scenario time frame postulated throughout the exercise sequence of events.

The major exercise events to be demonstrated will include protective action decision making and implementation of actions resulting in protection of the public from direct long-term exposure to deposited radioactive material and ingestion of contaminated food and water. To allow the demonstration of these activities, simulated scenario times, information and data will be provided to exercise participants for the demonstration of the exercise objectives. The season assumed for the purposes of the exercise is fall with the date being November 17, 2010. The specific schedule of events and timing of exercise events is provided in the table presented below and the detailed sequence of events.

Pilgrim Nuclear Power Station
2010 Ingestion Pathway Evaluated Exercise

EXERCISE EVENT PLAN SUMMARY

Event No./Simulated Scenario Time	Activity Description	Date	Time	Location(s)	Participants
Event 1/ T*+2 hrs 57	Transition from Plume Exposure Phase Exercise and conduct FRMAC Advance Party Meeting <ul style="list-style-type: none"> Establish Initial Conditions Assess Plume Data based on available map(s) 	To be conducted following the completion of the Plume Portion Exercise (Time is to be set aside for the DOE/NNSA person to hold/walkthrough the Advance Party Meeting.)	TBD	State EOCs and PNPS EOF	(both states) <ul style="list-style-type: none"> Designated Dose Assessment Staff/Decision Makers Support Agency Staffs Designated Controllers
* T=Refers to the time when release to the environment has been terminated and deposition of radioactive material is completely dispersed within the 50-mile area.					

Pilgrim Nuclear Power Station
2010 Ingestion Pathway Evaluated Exercise

Event No./Simulated Scenario Time	Activity Description	Date	Time	Location(s)	Participants
Event 2 (Out of sequence) 58	Post-Emergency Environmental Sample Collection	Morning of Day after Plume Portion of the Exposure Exercise	TBD	Designated Muster Point and Predetermined Sampling Locations	(both states) <ul style="list-style-type: none"> • Designated Environmental Sampling Team Coordinator • Designated Environmental Sampling Teams • Sampling Team Controllers
Event 3/ T+5 hrs	Establish Environmental Sampling Plan based on NARAC-provided Maps, Models and Measurements	Morning of Day after Plume Portion of the Exercise	TBD	State EOC	(both states) <ul style="list-style-type: none"> • Designated EOC Personnel • EOC Controllers
Event 4/ T+48 hrs	Radiological Assessment of Environmental Data and PAD Formulation for Relocation/Re-Entry/Return and Ingestion Pathway	Morning of Day after Plume Portion of the Exercise	TBD	State EOC	(both states) <ul style="list-style-type: none"> • State EOC Personnel • EOC Controllers
* T=Refers to the time when release to the environment has been terminated and deposition of radioactive material is completely dispersed within the 50-mile area.					

Pilgrim Nuclear Power Station
2010 Ingestion Pathway Evaluated Exercise

Event No./Simulated Scenario Time	Activity Description	Date	Time	Location(s)	Participants
Event 5/ T+72 hrs	Table Top Decision Making and Implementation of Relocation/ Re-Entry/Return	Afternoon of Day after Plume Portion of the Exercise	TBD	State of Massachusetts EOC only	<ul style="list-style-type: none"> • State EOC Personnel • EOC Controllers
Event 6/ T+72 hrs	Table Top Decision Making and Implementation of Ingestion Pathway Actions	Afternoon of Day after Plume Portion of the Exercise	TBD	State of Massachusetts and Rhode Island EOC	<ul style="list-style-type: none"> • State EOC Personnel • EOC Controllers

* T=Refers to the time when release to the environment has been terminated and deposition of radioactive material is completely dispersed within the 50-mile area.

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**MASSACHUSETTS
EVALUATION AREAS AND EXTENT OF PLAY¹
PILGRIM NUCLEAR POWER STATION EXERCISE
November 16-17, 2010**

Overview

The following organizations/locations will demonstrate in 2010:

State Emergency Operations Center

Massachusetts Emergency Management Agency
Massachusetts Department of Public Health
Massachusetts State Police
Massachusetts Department of Transportation
Massachusetts National Guard
Massachusetts Department of Mental Health
Massachusetts Department of Agricultural Resources
Massachusetts MDPH Food Protection Program
Massachusetts Department of Environmental Program
Massachusetts Department of Fish & Game
Office of the Secretary of the Commonwealth
Mass 2-1-1 Call Center
U.S. Coast Guard
Pilgrim Nuclear Power Station Liaison
American Red Cross
Federal Emergency Management Agency Region I
Federal Radiological and Monitoring Assessment Center

Region II Emergency Operations Center

Massachusetts Emergency Management Agency – Region II
Massachusetts State Police
Massachusetts Highway Department
Massachusetts National Guard
Pilgrim Nuclear Power Station Liaison
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

¹Based on guidance from Section III.B-Evaluation Areas, "Interim Radiological Emergency Preparedness (REP) Program Manual" August 2002.



Radiological Field Monitoring and Sampling Teams

Pilgrim Nuclear Power Station
Massachusetts Department of Public Health/Radiation Control Program

Joint Information Center

Pilgrim Nuclear Power Station
Massachusetts Emergency Management Agency

EAS Radio Stations

WBZ 1030 AM

Risk Jurisdictions

Carver EOC
Duxbury EOC
Kingston EOC
Marshfield EOC
Plymouth EOC

Support Jurisdictions

Braintree Command Center
Bridgewater EOC
Taunton EOC

Schools [NOTE: *Indicates KI Distribution Plan in place] Out of Sequence

Kingston:

Sacred Heart Elementary School* (10/5/10)
Sacred Heart High School* (10/5/10)

Plymouth:

Plymouth Community Intermediate School*
Indian Brook Elementary School*
Manomet Elementary School*
Plymouth North High School*
Mt. Pleasant Elementary School*
West Elementary School*
Hedge Elementary School*

Day Care Centers [NOTE: *Indicates KI Distribution Plan in place] Out of Sequence

Duxbury:

Berrybrook Preschool*(9/28/10)
Pilgrim Day Childcare*(9/22/10)
Discovery Corner Daycare* (9/27/10)

Kingston:

Sacred Heart Early Childhood Center* (10/5/10)

Plymouth:

Bright Ideas Preschool*(8/30/10)

Special Facilities: [NOTE: *KI Distribution Plan in place] Out of Sequence

Duxbury:

Baypath/Duxbury Nursing Home*(9/17/10)

Kingston:

Providence House* (9/14/10)
Pilgrim's Hope (9/14/10)

Plymouth:

Newfield Nursing Home (8/17/10)
Chilton House Rest Home (8/17/10)
Life Care House of Plymouth* (TBD)
Radius Health Care* (8/12/10)

Camps: [NOTE: * KI Distribution Plan in place] Out of Sequence

Plymouth:

Camp Clark (8/11/10)

Braintree Reception Center (7/2010)

Braintree TSA (Out of Sequence)

Radiological Emergency Worker Monitoring and
Decontamination Station (REWMDS) (Successfully demonstrated August 2009)

Milton KI Dispensing Site (Successfully demonstrated November 2009)

MS-1 Quincy Medical Center (Successfully demonstrated November 2009)

Good Samaritan Medical Center (December 2010)

Massachusetts State. Police at Middleborough Troop B (11/09)

FACILITIES NOT TO BE EXERCISED

Camps *not* to be exercised

Carver:

Camp Clear ('12)

Duxbury:

Camp Wing
Magic Mountain Summer Camp
Camp Friendship

Kingston:

Camp Norse('08)
Camp Mishannock('08)

Plymouth:

Wind in the Pines ('12)
Camp Bournedale ('11)
Cachalot Scout Reservation ('11)
Camp Squanto ('12)
Camp Massasoit ('11)

Carver:

Erwin K. Washburn Primary School ('08)
Carver Middle School ('11)
Carver High School ('11)
Governor John Carver Elementary ('11)

Duxbury:

Chandler Elementary School* ('08)
Bay Farm Montessori Academy ('08)
Duxbury Bay Maritime School ('08)
Good Shepherd Christian Academy
Alden Elementary ('12)
Duxbury Middle School ('12)
Duxbury High School ('12)

Kingston:

Kingston Elementary School* ('08)
Kingston Intermediate School* ('08)
Silver Lake Regional Middle School ('12)
Silver Lake Regional High School ('12)

Marshfield:

Governor Winslow School

Plymouth:

Cold Spring Elementary School* ('08)
Federal Furnace Elementary School* ('08)
Plymouth South High School* ('08)
Plymouth South Middle School* ('08)
South Elementary School* ('08)
Nathaniel Morton School* ('08)

Day Cares *not* to be exercised

Carver:

Kidstop Early Childhood Center ('08)
Captain Pal Preschool ('09)
KidsCount Nursery and Preschool ('09)
Old Colony Y ('11)

Duxbury:

Learn in Play Pre-School ('08)
Pied Piper Pre-School ('08)
Blue River Montessori ('08)
Elements Montessori ('11)

Pilgrim Area Collaboratives

Kingston:

Growth Unlimited PreSchool ('08)
Little People's Country Day Care ('11)
Wooded Acres Child Care ('11)
Crayon College, Inc. ('11)
South Shore Early Education: Kingston ('11)

Plymouth:

Methodist Nursery School ('08)
New Testament Christian Academy ('08)
Ponds Child Care Center* ('08)
South Shore Head Start* ('08)
Kinder College Nursery School ('08)
Kinder Care - Richards Street ('08)
Kinder Care - Pilgrim Hill Road ('08)
Bright Beginnings ('08)
Woodside School ('08)
Plymouth Family Network ('11)
Cedar Brook Children's Center ('11)
Cranberry Country Day Care ('11)
Crayon College, Inc. ('11)
Garden of Knowledge ('11)
Leaping Frog Preschool ('11)
Miss Joanne's Bright Beginnings ('12)
Pilgrim Academy ('12)
Pinewood School of Montessori ('12)
Rising Tide Public Charter School ('12)
Room 2 Grow ('12)
Tiny Town Children's Center ('12)

Special Facilities *not* to be exercised

Duxbury:

Group Facility at North Hill ('08)

Kingston:

Rehabilitative and Skilled Nursing Residence at Silver Lake* ('08)
The Inn at Silver Lake ('08)
Jones River Guest House ('11)
The Residences at Silver Lake ('12)
Vinfen Evergreen House ('12)
Kingston A & B ('12)
16 Center Street ('12)

Plymouth:

Plymouth Crossing Assisted Living ('08)
Sunrise Assisted Living ('08)
Baird Center ('08)
Community Connections, Inc ('08)
Golden Living Nursing Home* ('08)
Chilton House Rest Home ('08)
Life Care Center of Plymouth* ('08)
Stafford Hill Living('12)
High Point Treatment Center ('12)
Habilitation Assistance ('12)
Teamworks ('12)

OTHER FACILITIES NOT TO BE EXERCISE

Myles Standish State Forest

MCI Plymouth

Bridgewater Reception Center

Taunton Reception Center

Brockton KI Dispensing Site

Department of Corrections Bridgewater Complex Monitoring and Decontamination

Massachusetts Environmental Radiation Laboratory (MERL) at Jamaica Plain, MA

Jordan Hospital

Carver TSA ('07)

Kingston TSA

Plymouth TSA (Scusset Beach)

Marshfield TSA

NOTE: "On the Spot" corrections approved for the below mentioned sub-elements, as per FEMA Region 1 MEMORANDUM dated, August 4, 2010.

Note: If during the exercise, a participant demonstrates sub-element 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 4.a.3, 4.b.1 or 5.b.1 unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

EVALUATION AREA 1: Emergency Operations Management

Sub-element 1.a – Mobilization

Intent

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

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

Extent of Play

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

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

Massachusetts Extent of Play

State EOC: MEMA SEOC 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 notified to report for duty at an earlier time.

MEMT staff: MA Dept. of Public Health, Dept. of Highways, American Red Cross, Dept. of Mental Health, MA State Police, MA National Guard, U. S. Coast Guard, Pilgrim Nuclear Power Station Liaison and the Federal Emergency Management Agency will be in the area awaiting notification. Once notified to report, they will use a compressed time 10 minutes/hour of normal travel response time.

Operations/communications staff will show call down or computerized lists to the FEMA evaluator.

Emergency Operations Facility (EOF) – Massachusetts Emergency Management Agency (MEMA) and Massachusetts Department of Public Health (MDPH) personnel will be in the area awaiting notification. Once notified to report, they will use a compressed time 10 minutes/hour of normal travel response time.

Joint Media Center – MEMA personnel will be in the area awaiting notification. Once notified to report, they will use a compressed time: 10 minutes/hour of normal travel response time.

Region II – MEMA Region II emergency staff who normally work at other locations will arrive at the EOC at the times they normally report for work, unless they are paged/called and directed to report for duty at an earlier time. MEMT and volunteer staff will be in the area awaiting notification. Once notified to report, they will use a compressed time: 10 minutes/hour of normal travel response time.

Operations/communications staff will show call down and computerized lists to the FEMA evaluator.

The MEMA Region II Special Facilities Coordinator, in an interview with the FEMA evaluator, will provide a list of schools located outside the EPZ with students who reside within the EPZ. Calls to schools outside with EPZ will be simulated and logged.

NIAT Field Monitoring Team Personnel – Field Team personnel will be in the area awaiting notification. Once notified to report, they will use a compressed time: 10 minutes/hour of normal travel response time.

The Teams will report to the Pilgrim Station EOF in Plymouth on Day 1 to obtain Plume Phase Field Team Kits and demonstrate pre-deployment actions as specified in Section D.4 of the NIAT Handbook.

The Field Team Coordinator will interface directly with the NIAT teams when he arrives at the utility EOF.

State Police Troop D – Will dispatch representatives to the Region II EOC, but traffic and access control personnel will not be mobilized (see Evaluation Area 3.d.).

Plymouth County Sheriff's Emergency Management Agency (PCSEMA) – Will demonstrate communications with emergency staff and obtain ETA, however, staff and vehicles will not be mobilized, except for the PCSEMA liaison who will report to the MEMA Region II EOC.

Transportation Providers – Calls will be made to ten 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.

Sub-element 1.b – Facilities

Intent

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

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

Extent of Play

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

Massachusetts Extent of Play

The Taunton EOC has changed location due to a recent fire. This new location will be evaluated to establish capability of supporting emergency response.

Sub-element 1.c - Direction and Control

Intent

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

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

Extent of Play

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

All activities associated with direction and control must be performed based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise noted

Massachusetts Extent of Play

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.

ARCA – DUXBURY - EOC

Issue Number: 48-08-1.c.1-A-01

Condition: *The Duxbury Selectmen and Emergency Management Director (EMD) failed to ensure that an observer of the exercise did not interfere with exercise activities as required by FEMA rules. An observer of the Duxbury Emergency Operations Center (EOC) was allowed to interact extensively with the Selectmen during the exercise and influenced decisions.*

Possible Cause: *The role of an observer (to view activities only and not to participate in discussions or strategy sessions) was not fully understood by the exercise participants and the observer.*

Reference: NUREG-0654, N.1.a, N.1.b, N.4

Effect: *Following a discussion between the observer and the Duxbury Selectman, the Selectman instructed the EMD to have the school children from Duxbury schools take potassium iodide (KI) while the students were already on buses and being transferred to Braintree High School. Since the students were already being transported away from the area, and, since there had not been a release of radioactive material, the use of KI was unwarranted. Further, the buses could not be contacted after leaving the Duxbury schools until they had reached Braintree High School. Therefore, the implementation of this directive could not be accomplished.*

Recommendation: *Ensure that all participants (including observers) understand their role during an exercise. The EMD should have the authority and responsibility to ensure that observers and evaluators do not interfere with the conduct of the exercise or influence decision-making.*

Sub-element 1.d – Communications Equipment

Intent

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

emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.

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

Extent of Play

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

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

Massachusetts Extent of Play

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 1-7).

NOTE: "On the Spot" corrections approved for the fore mentioned sub-element. That portion of the evaluation element relating to both the proper functionality of communications systems and the proper use of those systems.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

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

Intent

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

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

Extent of Play

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

All instruments 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.

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 72-hour pathway EPZ.

Quantities of dosimetry and KI available and storage location(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted

[REDACTED]

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.

Massachusetts Extent of Play

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: "On the Spot" corrections approved for the fore mentioned sub-element. That portion of the evaluation element where players are initially unable to show proper equipment, supplies or documentation.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

EVALUATION AREA 2: Protective Action Decision-Making

Sub-element 2.a - Emergency Worker Exposure Control

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (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.

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

Extent of Play

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

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

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

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

Massachusetts Extent of Play

Protective action decisions are demonstrated at the Massachusetts State EOC based upon information provided from the EOF

Radiation Control Program EOF staff will analyze utility, field team and meteorological data provided at the EOF to make a recommendation to the State EOC for their consideration in making protective action decisions.

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

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) have the capability to use all available data to independently project integrated dose and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. OROs base these choices on PAGs from the ORO's plans and procedures or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with

other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

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

Extent of Play

During the initial stage of the emergency response, following notification of plant conditions that may warrant offsite protective actions, the ORO should demonstrate the capability to use appropriate means, described in the plan and/or procedures, to develop protective action recommendations (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.

Massachusetts Extent of Play

This evaluation area will be demonstrated in accordance with the NIAT Handbook in the context of the exercise scenario. RAD DOSE or other accident assessment methods that are available will be used by the Dose Assessment Coordinator at the utility EOC as needed to independently verify dose projections performed by the utility.

The State EOC decision making team will evaluate the protective action recommendations of the NIAT accident assessment team and develop appropriate protective action decisions.

Protective action recommendations will be made in accordance with the MARERP and NIAT Handbook.



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

Extent of Play

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.

Massachusetts Extent of Play

Protective action decisions are demonstrated at the Massachusetts State EOC based upon information provided by the EOF. MEMA and MDPH Radiation Control Program staff will analyze utility, field team and meteorological data provided at the EOF to make a recommendation to the State EOC for their consideration in making protective action decisions.

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

Intent

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

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

Extent of Play

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

Massachusetts Extent of Play

Protective action decisions, including those for special population groups, are demonstrated at the Massachusetts State EOC based upon information provided by MEMA and MDPH Radiation Control Program staff at the EOC. MEMA and MDPH Radiation Control Program staff will

analyze utility, field team and meteorological data provided at the EOP to make a recommendation to the State EOC for their consideration in making protective action decisions.

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

Intent

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

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

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.11)

Extent of Play

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.

ORO 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.

Massachusetts Extent of Play

The MDPH NIAT dose assessment team will demonstrate from the SEOC the capability to project ingestion pathway doses and develop ingestion pathway protective action decisions in accordance with Section D.7 of the NIAT Handbook. This will include assessing information from the plume phase of the exercise and comparing laboratory results of environmental samples collected from milk, water, and other food products of concern.

To allow this process to be demonstrated and to have a timely dissemination of the environmental sample results, Controllers will have available to them pre-determined and chosen sample locations with filled out sample analysis results within the area of concern. The pre-determined sample information will represent each type of potential sample media of milk, water, and other food products. Controllers will provide the pre-determined sample information and data based on the assumed sampling strategy established by the assessment team and postulated scenario time frame. Controller provided data will be in the form of information consistent with the laboratory results of environmental samples.

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

Intent

This sub-element is derived from NUREG-0654, which provides that Offsite Response Organizations (ORO) 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.

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; M.1)

Extent of Play

Relocation: OROs should demonstrate the capability to estimate integrated dose in contaminated

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.

Massachusetts Extent of Play

State EOC: As required by the scenario, decision-making regarding relocation, re-entry to previously evacuated areas, and return to previously evacuated areas will be demonstrated.

All appropriate State-level and interstate coordination and communication will be demonstrated. Communication and coordination with Federal agencies participating in the exercise will be demonstrated. Any communications or coordination with towns or non-participating Federal agencies will be simulated by logging the call(s).

MDPH: Controller information will be provided to the MDPH NIAT dose assessment team so that they may be able to demonstrate the capability to calculate integrated doses with the contaminated areas and compare the results with the protective action guides for deposited radioactive materials. Decisions on relocation, re-entry, and return will be made in accordance with the NIAT Handbook, Section D.11, based on these assessments.

To allow this process to be demonstrated and to have a timely assessment of the data, Controllers will have available to them pre-determined and chosen sample locations with filled out sample analysis results within the area of concern. Controllers will provide the pre-determined sample information and data based on the assumed sampling strategy established by the assessment team and postulated scenario time frame. Controller provided data will be in the form of information consistent with the laboratory results of environmental samples.

EVALUATION AREA 3: Protective Action Implementation

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

Intent

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

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



Extent of Play

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

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

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

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

Massachusetts Extent of Play

EPZ EOCs: Dosimetry packets will be issued to a minimum of five 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 only with individuals issued dosimetry.

NOTE: "On the Spot" corrections approved for the fore mentioned sub-element. That portion of the evaluation element dealing with issuing of dosimetry and briefings. Also to be included is the demonstration by emergency worker knowledge of radiation control.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

ARCA- KINGSTON-EOC

Issue Number: 48-08-3.a.1-A-02

Condition: The Radiological Liaison Dosimetry Coordinator (RLDC) at the Kingston Emergency Operations Center (EOC) did not properly conduct a radiological briefing for emergency workers and did not provide dosimeters that were ready for use. The RLDC was given on the spot training, and the briefing was re-demonstrated to emergency workers within the EOC. The revised radiological briefing, although improved, still contained errors of omission. The Direct Reading Dosimeters provided were not set at zero. Within the EOC, the reading of dosimeters in 15 minute increments was sporadic.

Possible Cause: The RLDC may have been unfamiliar with the requirements for radiological briefings of emergency workers and with his responsibilities as a RLDC.

References:

NUREG-0654, K.3.a, b
Town of Kingston Radiological Emergency Response Plan, Section II,
Part K, 3.a, 3.d, 3.e

Effect: Emergency workers did not understand the proper use of the issued dosimetry or the administrative levels for call-in.

Recommendation: Procedures for the RLDC should be specific and detailed in briefing procedure and content, and the RLDC should be versed and trained in those procedures.

Sub-element 3.b – Implementation of KI Decision

Intent

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

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

Extent of Play

Offsite Response Organizations (ORO) should demonstrate the capability to make KI available to emergency workers, institutionalized individuals, and, where provided for in the ORO plan

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

For evaluation purposes, the actual ingestion of KI is not necessary. OROs should demonstrate the capability to formulate and disseminate appropriate instructions on the use of KI for those advised to take it. If a recommendation is made for the general public to take KI, appropriate information should be provided to the public by the means of notification specified in the ORO's plan and/or procedures.

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

Massachusetts Extent of Play

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.

Schools, Day Care, institutionalized and special facility staff who administer KI, will be interviewed out of sequence by the FEMA Evaluator. 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.

NOTE: "On the Spot" corrections approved for the fore mentioned sub-element.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

Intent

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

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

Extent of Play

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

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

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

Massachusetts Extent of Play

SEOC: The U.S. Coast Guard representative will establish contact with the District Command Center and communicate with them throughout the exercise. No Broadcasting over the Pilgrim

Marine Information Broadcast will occur. Only initial communication with the Captain of the Port will be established thereafter contact will be simulated.

Region II: Calls will be made to ten 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. A list of all transportation providers will be provided to the evaluator.

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 pages 1-7).

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 for non participating facilities. (See Extent of Play Overview for the listing of facilities pages 1-7).

EPZ EOC: Staff will simulate contact with persons with special needs. In an interview with the FEMA evaluator, staff will explain the process of notifying those individuals who have identified themselves as needing help during an emergency. 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 their 24 hour warning point. No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Identified special facilities and camps will be visited out of sequence by a FEMA evaluator, who will interview key staff. (See the Extent of Play Overview for listing of identified special facilities and camps pages 1-7).

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

Extent of Play

Public school systems/districts shall demonstrate the ability to implement protective action decisions for students. The demonstration shall be made as follows: At least one school in each affected school system or district, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and

complete the evacuation of students to reception centers, congregate care centers, or host schools may actually be demonstrated or accomplished through an interview process. If accomplished through an interview process, appropriate school personnel including decision making officials (e.g., superintendent/principal, transportation director/bus dispatcher), and at least one bus driver (and the bus driver's escort, if applicable) should be available to demonstrate knowledge of their role(s) in the evacuation of school children. Communications capabilities between school officials and the buses, if required by the plan and/or procedures, should be verified.

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

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

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

Massachusetts Extent of Play

Region II: The MEMA Region II Special Facilities Coordinator, in an interview with the FEMA evaluator, will provide a list of schools located outside the EPZ with students who reside within the EPZ. Calls to schools outside with EPZ will be simulated and logged.

EPZ EOCs: Initial notification will be made to all school and day care centers.

EPZ Schools: Participating schools in the EPZ communities were visited out of sequence by a FEMA evaluator, who interviewed key staff regarding their response plan. (See Extent of Play Overview for the listing of facilities pages 1-7).

Day Care Centers: Participating day care centers in the EPZ communities will receive the initial. Participating facilities were visited out of sequence by a FEMA evaluator who interviewed key staff regarding their response plan. (See Extent of Play Overview for the listing of facilities pages 1-7).

Condition: The Kingston Elementary School and the Kingston Intermediate School students and staff were not relocated to Bridgewater as a precautionary measure.

Possible Cause: The Kingston Elementary School and the Kingston Intermediate School were not notified by the School Superintendent's office that students and staff were to be relocated to Bridgewater as a precautionary measure. This information had been passed from the Kingston Emergency Operations Center to the School Superintendent's office at about 0935.

References:

NUREG-0654, J.10.c
School Department Standard Operating Procedure (KIN-06)

Effect: School students and staff could have been subjected to exposure to radioactive material.

Recommendation: Provide training to School Superintendent's Office staff regarding the provisions of Standard Operating Procedure KIN-6 for precautionary relocation of children.

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

Intent

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

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

Extent of Play

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

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

Massachusetts Extent of Play

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 and the Local Police representative will participate in a discussion of procedures and resources available for traffic control. No personnel or equipment will be deployed to field locations.

NOTE: "On the Spot" corrections approved for the fore mentioned sub-element. Appropriate traffic and access control established. Accurate instructions are provided to traffic and access control point personnel.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

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

Extent of Play

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

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

Massachusetts Extent of Play

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

NOTE: "On the Spot" corrections approved for the fore mentioned sub-element. Impediments to evacuation are identified and resolved.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

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

Intent

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

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

Extent of Play

Applicable 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.

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

Massachusetts Extent of Play

State EOC – Exercise play will include demonstration of communications and coordination that will be required between organizations to implement ingestion pathway protective actions. However, actual field play of implementation activities will be simulated. For example, communication and coordination with agencies responsible for implementing food, milk, and water controls within the ingestion pathway EPZ will be simulated by showing evaluators the contact list(s) of farmers, food producers, and processors that would be used in a real emergency. Since the information is confidential, a copy will not be provided to the evaluator; however, the evaluator will be shown either a hard copy or the data on a computer.

All appropriate State level and interstate coordination and communication will be demonstrated. Coordination and communications with Federal agencies participating in the exercise will be demonstrated. Any communications or coordination with communities or non-participating Federal agencies will be simulated by logging the call(s).

All appropriate news releases informing the public of protective actions and other essential information will be developed and disseminated within the State EOC, Region II EOC (playing at the State EOC on Day 2), and EPZ EOCs (simulated). News releases will be sent to the Joint Information Center (if it is still in operation); distribution to EAS Stations will be simulated. All prepared news releases will be provided to the evaluator for review.

MDPH will discuss methods of distributing pre-printed instructional material on ingestion-related protective actions to the general public and to farmers, food processors, and food distributors. Brochures for farmers, agricultural workers, food processors, and food distributors are available and stockpiled for distribution as needed. Distribution lists will be provided by the MA Department of Public Health Food Protection Program, MA Department of Agricultural Resources, and the MA Department of Fish & Game and distributions methods will be discussed, but actual distribution will be simulated.

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

Extent of Play

Development of measures and strategies for implementation of 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



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.

Massachusetts Extent of Play

Appropriate measures, strategies, and pre-printed instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production at the Massachusetts State EOC and are coordinated as appropriate, based on plans and procedures.

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

Intent

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

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

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

Extent of Play

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

Massachusetts Extent of Play

Decisions regarding controlled re-entry of emergency workers and relocation and return of the public are coordinated with appropriate organizations and implemented at the State EOC per plans and procedures.

On Day 2 (November 17th), the MEMA Region II Manager and Technical Hazards Officer will be located at the State EOC and will participate in discussions regarding logistics. Local EPZ communities will not be participating; contact will be simulated. Traffic and access control will be coordinated per plans and procedures. No deployment will occur.

News releases will be prepared and distributed within the State EOC and the Joint Information Center Media Center (if operational). All other distribution will be simulated.

EVALUATION AREA 4: Field Measurement And Analysis

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

Intent

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

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

Extent of Play

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

All 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.

Massachusetts Extent of Play

For the purposes of this exercise, two MA NIAAT Field Teams will be dispatched from the Utility EOF in Plymouth in accordance Section D.4 of the NIAAT Handbook. Controller messages will provide simulated monitoring data.

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

Extent of Play

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

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

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

ORO 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.

Massachusetts Extent of Play

NIAAT Field Teams are managed by the Field Team Coordinator (FTC) located at the utility EOF. The FTC will brief and dispatch the teams to sampling locations in accordance with the NIAAT Handbook, Section D.4 as dictated by scenario. 95

NIAT Field Team personnel will prepare sample media, survey forms, and chain of custody documents as if they were being transferred to a lab for analysis. Actual transport of samples will be simulated.

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

Extent of Play

Field teams should demonstrate the capability to report measurements and field data pertaining to the measurement of airborne radioiodine and particulates and ambient radiation to the field team coordinator, dose assessment, or other appropriate authority. If samples have radioactivity significantly above background, the appropriate authority should consider the need for expedited laboratory analyses of these samples. OROs should share data in a timely manner with all appropriate

ORO's. 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.

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

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

Massachusetts Extent of Play

Two, 2 person MA NIAT Field Teams will be dispatched from the utility EOF in accordance with the NIAT Handbook. Once dispatched, only disposable gloves will be used for actual exercise play. Charcoal cartridges will be used instead of silver zeolite.

The NIAT Field Teams will collect one complete sample (monitoring and air sample) as specified by the procedures in Section D.4 of the NIAT Handbook.

NOTE: "On the Spot" corrections approved for the fore mentioned sub-element. That portion of the evaluation element that demonstrates one complete sample.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

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

Intent

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

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

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

Extent of Play

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

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

ORO's 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.

Massachusetts Extent of Play

Two, 2 person NIAT Field Teams will be demonstrated. Post Plume field kits are stored at the Massachusetts State Laboratory Institute in Jamaica Plain. By procedure, Field Teams are dispatched from the State Laboratory for Post-Plume activities. However, field teams will be dispatched from the Utility EOF for day-2 activities to facilitate exercise play. Environmental Sampling Kits will be delivered to the utility EOF to facilitate play. The Field Teams will be briefed at the EOF by the Field Team Coordinator.

For exercise play the two teams will be dispatched to the O'Neil Farm in Duxbury, MA. Sampling locations for each sample matrix will be determined and posted in advance.

Each team will be assigned a sampling location and a schedule for moving through the sampling stations while at the assembly area. Each sampling team will be directed to their assigned sampling locations by a controller. The teams will cycle through all the sample locations until all the targeted sample matrixes are collected.

The use of personal protective equipment (PPE) will be simulated with the exception of any PPE required to protect the health of the livestock and property of O'Neil Farm. O'Neil Farm is a working farm and it may be necessary for everyone including controllers and evaluators to use shoe covers while on the property.

The sampling location will provide the appropriate sample matrixes. Some change in the targeted sample matrix maybe necessary due to climate.

One sample each of the following will be collected: milk, surface water, soil, and vegetation (or forage) as available due to climate conditions.

The teams will demonstrate how the chain of custody is established and talk through the relinquishing portion of transfer of samples to an environmental laboratory. No samples will be physically delivered to the laboratory.

If FRMAC resources are available the teams can integrate with FRMAC staff and collect samples as an integrated federal/state team. The teams will not be evaluated if they do integrate and collect samples.

NOTE: *"On the Spot" corrections approved for the fore mentioned sub-element. That portion of the evaluation element that deals with the proper collection and analysis of field samples.*

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization; the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

Sub-element 4.c - Laboratory Operations

Intent

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

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

Extent of Play

The laboratory staff should demonstrate the capability to follow appropriate procedures for receiving samples, including logging of information, preventing contamination of the laboratory, preventing buildup of background radiation due to stored samples, preventing cross contamination of samples,

preserving samples that may spoil (e.g., milk), and keeping track of sample identity. In addition, the laboratory staff should demonstrate the capability to prepare samples for conducting measurements.

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.

Massachusetts Extent of Play

This activity will not be demonstrated this exercise.

EVALUATION AREA 5: Emergency Notification and Public Information

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

Intent

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide prompt instructions to the public within the plume pathway EPZ. Specific provisions addressed in this sub-element are derived from the Nuclear Regulatory Commission

(NRC) regulations (10 CFR Part 50, Appendix E.IV.D.), and FEMA-REP-10, "Guide for the Evaluation of Alert and Notification systems for Nuclear Power Plants."

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

Extent of Play

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

Offsite Response Organizations (ORO) with route alerting as the primary method of alerting and notifying the public should demonstrate the capability to accomplish the primary route alerting, following the decision to activate the alert and notification system, in a timely manner (will not be subject to specific time requirements) in accordance with the ORO's plan and/or procedures. At least one route needs to be demonstrated and evaluated. The selected route(s) should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (that is, the message that would actually be used is read for the evaluator; but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location. The initial message should include the elements required by current FEMA REP guidance.

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

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

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

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

Massachusetts Extent of Play

MEMA SEOC: 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/encoded by MEMA. The State Primary EAS Station of WBZ will be contacted and notified that activations of the EAS System will be handled out of the SEOC. Actual activation of the Emergency Alert System will be simulated by SEOC staff.

The MA SEOC will demonstrate the actions necessary to perform the siren activation up to the point of actually sounding 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.



ARCA-PLYMOUTH-EOC

Issue Number: 48-08-5.a.1-A-04

Condition: State notification to sound sirens at the Site Area Emergency was not acted upon in a timely manner at the Plymouth Emergency Operations Center (EOC). Activation directed to occur at 1035 did not take place (simulated) until 1050.

Possible Cause: Notification advisory from the State was received by the EOC radio dispatcher at 1031, but the emergency manager indicated he waited for receipt of a fax with a signature authorization that was never received. He ultimately directed the sirens activated based on information on the state web log.

Reference: NUREG-0654 E.5, E.6 and E.7

Effect: Sirens in adjacent jurisdictions were sounded at 1035, 15 minutes earlier than in Plymouth. The objective of coordinating synchronized sounding of the sirens was not achieved. Likewise, the State-originated EAS message would have been broadcast prior to the sounding of the sirens in Plymouth.

Recommendation: Re-evaluate the policy that the emergency manager does not act on siren activation without a "written" directive from the state.

Criterion 5.a.2: [RESERVED]

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

Extent of Play

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

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

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

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

Massachusetts Extent of Play

This sub-element will not be demonstrated this iteration

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

Intent

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

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

Extent of Play

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

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

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

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

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

ORO 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.

ORO 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.

Massachusetts Extent of Play

Joint Information Center: Rumor trends generated as a result of public inquiry calls to the Mass-211 Public Information Line will be included in news briefings by the MEMA PIO.

Simulation Cell personnel will make calls simulating members of the public and media to the Mass-211 Public Information Line. This process will commence after the initial siren activation.

Mass-211 Operations Center: Staff from Mass-211 and the Office of the Secretary of the Commonwealth will demonstrate the ability to handle inquiry calls. Handling at least two rumor trends will be demonstrated.

EPZ Towns: Simulation Cell personnel at the SEOC will make calls to the local EOCs simulating members of the public with inquiries. Each local EOC will demonstrate the ability to properly handle these inquiries.

DAY 2 - Ingestion: The PIO and staff will be located at the SEOC. Based on ingestion events two News Releases will be prepared for the Directors approval. Once approved distribution of the news releases will be simulated.

Based on events press briefings will be simulated in the Media Room at the SEOC.

NOTE: "On the Spot" corrections approved for the fore mentioned sub-elements. That portion of the evaluation element dealing with "timely manner" and emergency information being all-inclusive. Players should have the opportunity to re-demonstrate this criterion in subsequent messages.

Note: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant and the Controller. After an "on the spot" re-training by the state or local organization, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

EVALUATION AREA 6: Support Operation/Facilities

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

Intent

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

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

Extent of Play

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

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 met. Monitoring of emergency workers does not have to meet the twelve-hour requirement. However, appropriate monitoring procedures should be demonstrated for a minimum of two emergency workers.

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

Massachusetts Extent of Play

Successfully demonstrated 7/10.

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

Intent

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

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

Extent of Play

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

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

[REDACTED]

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.

Massachusetts Extent of Play

This sub-element was successfully demonstrated August 2009.

Sub-element 6.c - Temporary Care of Evacuees

Intent

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

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

Extent of Play

Under this criterion, demonstration of congregate care centers may be conducted 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.

Massachusetts Extent of Play

Congregate care centers will not be activated. Shelter surveys will be provided to FEMA of new and/or revised shelters for review.

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

Intent

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

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

Extent of Play

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

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

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

Massachusetts Extent of Play

Quincy Medical Center was successfully demonstrated November 19, 2009.

Good Samaritan Medical Center will be demonstrated in December 2010.

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