Vermont Yankee Power Station

After Action Report/ Improvement Plan

Exercise Date - May 03, 2011

Radiological Emergency Preparedness (REP) Program

FEMA

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After Action Report/Improvement Plan

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EXECUTIVE SUMMARY

On May 3rd and 4th, 2011, the U.S. Department of Homeland Security (DHS), Preparedness Directorate, National Preparedness Division, Radiological Emergency Preparedness (REP), Federal Emergency Management Agency (FEMA) Region I conducted a Graded Exercise in the 10-mile Ingestion Pathway Emergency Planning Zone (EPZ) around the Vermont Yankee Nuclear Power Station. This report contains the final evaluation of the biennial Graded Exercise and associated out-of-sequence activities.

Interviews and out-of-sequence demonstrations for schools, other special facilities, and reception, monitoring, and decontamination centers (as outlined in this report) were conducted within 60 days of the Exercise. The purpose of the Exercise and out-of-sequence activities was to assess the level of state and local preparedness in responding to a radiological emergency. This Exercise was held in accordance with FEMA's policies and guidance concerning the exercise of state and local Radiological Emergency Response Plans (RERP) and Implementing Procedures.

FEMA wishes to acknowledge the efforts of the many individuals in The Commonwealth of Massachusetts, The State of New Hampshire, The State of Vermont, local communities, and private and volunteer organizations that participated in this Exercise.

Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly 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.

The state and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies. There were five (5) Areas Requiring Corrective Action (ARCA) identified as a result of this exercise, three (3) of which were re-demonstrated during the exercise. One ARCA from the 2005 Vermont Yankee Ingestion Pathway Exercise was resolved, one ARCA from the 2010 Pilgrim Ingestion Pathway Exercise was resolved, and one ARCA from the 2005 Greenfield Reception Center Exercise was resolved.

SECTION 1: EXERCISE OVERVIEW

1.1 Exercise Details

Exercise Name
Vermont Yankee Power Station

Type of Exercise
Ingestion

Exercise Date
May 03, 2011

Program
Department of Homeland Security/FEMA Radiological Emergency Preparedness Program

Scenario Type
Radiological Emergency

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1.3 Participating Organizations

Agencies and organizations of the following jurisdictions participated in the Vermont Yankee Power Station exercise:

- State Jurisdictions
  - STATE OF VERMONT
  - Vermont 211 Call Center
  - Vermont Agency for Agriculture, Food & Markets
  - Vermont Agency of Natural Resources
  - Vermont Agency of Transportation
  - Vermont Center for Geographic information
  - Vermont Department of Education
  - Vermont Department of Environmental Conservation
  - Vermont Department of Health
  - Vermont Department of Labor
  - Vermont Division of Fire Safety
  - Vermont Emergency Management

Vermont Homeland Security
Vermont National Guard
Vermont Public Safety
Vermont State Police
STATE OF NEW HAMPSHIRE
New Hampshire Department of Agriculture, Markets & Food
New Hampshire Department of Health and Human Services, Child Support Division
New Hampshire Department of Health and Human Services, Emergency Services Unit
New Hampshire Department of Health and Human Services, Human Resources
New Hampshire Department of Health and Human Services, Spill Response and Complaint
New Hampshire Department of Resource and Economic Development
New Hampshire Department of Transportation
New Hampshire Division of Fire Standards and Training and Emergency Medical Services
New Hampshire Division of State Police
New Hampshire E-911
New Hampshire Fire Marshal's Office
New Hampshire Fish and Game Department
New Hampshire Homeland Security and Emergency Management
COMMONWEALTH OF MASSACHUSETTS
Massachusetts 211 Call Center
Massachusetts Department of Conservation and Recreation
Massachusetts Department of Mental Health
Massachusetts Department of Public Health
Massachusetts Department of Transportation
Massachusetts Emergency Management Agency Headquarters (Framingham)
Massachusetts Emergency Management Agency Region III/IV (Agawam)
Massachusetts Environmental Police
Massachusetts Executive Office of Health and Human Services
Massachusetts National Guard
Massachusetts State Police

Office of the Secretary of State for the Commonwealth of Massachusetts

Risk Jurisdictions

STATE OF VERMONT

Brattleboro Finance Department

Brattleboro Fire Department

Brattleboro Police Department

Brattleboro Public Works Department

Dummerston Communications Unit

Dummerston Elementary School

Dummerston Emergency Management

Dummerston Health Department

Dummerston Highway Department

Dummerston Board of Selectmen

Guilford Constable

Guilford Emergency Management

Guilford Highway Department

Guilford Board of Selectmen

Guilford Volunteer Fire Company

Halifax Clerk's Office

Halifax Constable

Halifax Elementary School

Halifax Emergency Medical Services

Halifax Fire Department

Halifax Garage

Halifax Board of Selectmen

Vernon Clerk's Office

Vernon Fire Department

Vernon Police Department

Vernon Board of Selectmen

West Dummerston Fire Department

Windham County Community Emergency Response Team

Windham Southeast Supervisory Union Schools

STATE OF NEW HAMPSHIRE

Chesterfield Fire Department

Chesterfield Highway Department
Chesterfield Office of Emergency Management
Chesterfield Police Department
Chesterfield School District
Chesterfield Board of Selectmen
Hinsdale Fire Department
Hinsdale Highway Department
Hinsdale Police Department
Hinsdale Board of Selectmen
Richmond Emergency Management
Richmond Fire Department
Richmond Police Department
Richmond Rescue Squad
Richmond Board of Selectmen
Spofford Fire Department
Swanzey Communications Unit
Swanzey Emergency Management
Swanzey Fire Department
Swanzey Police Department
Swanzey Public Works Department
Swanzey Board of Selectmen
Winchester Highway Department
Winchester Office of Emergency Management
Winchester Police Department
Winchester Selectmen Board
Winchester Volunteer Fire Department
COMMONWEALTH OF MASSACHUSETTS
Agawam Office of Emergency Management
Bernardston Board of Health
Bernardston Fire Department
Bernardston Highway Department
Bernardston Police Department
Bernardston Board of Selectmen
Colrain Ambulance Association

Colrain Board of Health
Colrain Fire Department
Colrain Highway Department
Colrain Police Department
Colrain Board of Selectmen
Franklin County Amateur Radio Club
Franklin County Amateur Radio Emergency Services
Gill Board of Health
Gill Fire Department
Gill Highway Department
Gill Police Department
Gill Board of Selectmen
Greenfield Emergency Management
Greenfield Police Department
Greenfield Health Department
Greenfield Fire Department and Dispatch
Greenfield Department of Public Works
Greenfield Mayor's Office
Leyden Police Department
Leyden Fire Department
Leyden Highway Department
Leyden Board of Selectmen
Northfield Emergency Management
Northfield Highway Department
Northfield Police Department
Northfield Public Health Department
Northfield Board of Selectmen
Pioneer Valley Regional School District
Warwick Elementary School
Warwick Emergency Management
Warwick Fire Department
Warwick Highway Department
Warwick Police Department
Warwick Board of Selectmen

Support Jurisdictions

- STATE OF NEW HAMPSHIRE
- Cheshire County Sherriff's Office
- Keene Fire Department
- Keene Police Department
- Keene Public Works Department
- COMMONWEALTH OF MASSACHUSETTS
- American Red Cross

Private Organizations

- American Red Cross, Massachusetts Bay
- American Red Cross, Springfield, Massachusetts
- Public Utility Commission
- Radio Amateur Civil Emergency Services
- Radio Station WKNE
- United Way of Massachusetts Bay
- Vermont Yankee Nuclear Power Plant

Federal Jurisdictions

- Federal Emergency Management Agency
- United States Centers for Disease Control
- United States Department of Agriculture
- United States Food and Drug Administration
- United States Nuclear Regulatory Agency

SECTION 2: EXERCISE DESIGN SUMMARY

2.1 Exercise Purpose and Design

The purpose of this report is to present the results and findings on the performance of the offsite response organizations (OROs) during a simulated radiological emergency.

FEMA Region I evaluated the May 3-4, 2011, exercise to assess the capabilities of state and local emergency preparedness organizations in implementing their Radiological Emergency Response Plans (RERPs) and procedures to protect the public health and safety during a radiological emergency involving Vermont Yankee Power Station.

2.2 Exercise Objectives, Capabilities and Activities

The exercise objectives, capabilities, and activities are noted in the extent of play agreement, included in Appendix D, Exercise Plan.

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

This section contains the results and findings of the evaluation of all jurisdictions and functional entities that participated in the May 3-4, 2011 Plume and Post Plume Exercise, conducted to test the offsite emergency response capabilities of State and local governments in the Vermont Yankee Power Station 10-mile Emergency Planning Zone (EPZ) and 50-mile Ingestion Pathway.

Each jurisdiction and functional entity was evaluated on its demonstration of criteria contained in the exercise evaluation areas as outlined in the federal Register, Volume 67, No. 80 "FEMA - Radiological Emergency Preparedness: Exercise Evaluation Methodology" (April 25, 2002). Detailed information on the evaluation area criteria and the extent-of-play agreements for the exercise are included as appendices to this report.

3.2 Summary Results of Exercise Evaluation

The matrix presented in the table on the following pages presents the status of all exercise evaluation area criteria that were scheduled for demonstration during the exercise by all participating jurisdictions and functional entities.

Exercise criteria are listed by number, and the demonstration status of those criteria are indicated by the use of the following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercise)
A - ARCAs assessed or unresolved ARCAs from previous exercises
D - Deficiency assessed
P - Plan Issues
N - Not Demonstrated

Note: Blank fields indicate criterion was not evaluated at that location.

Table 3.1 - Summary of Exercise Evaluation (7 pages)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		VT SEOC	VT SEOC - Day 2	VT EOF	VT JIC	VT VY FMT-1	VT VY FMT-2	VT Rockingham State Police	VT AWP	VT 211	VT VY FST-Coordinator	VT VY FST-1
Emergency Operations Management												
Mobilization	1a1	M		M	M			M	M			
Facilities	1b1	M										
Direction and Control	1c1	X	M	M	P						M	
Communications Equipment	1d1	M		M	M	M	M	M	M	M	M	M
Equip & Supplies to support operations	1e1	M		M	M	M	M			M	M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1	M		M								
Radiological Assessment and PARs	2b1	M		M								
Decisions for the Plume Phase -PADs	2b2	P										
PADs for protection of special populations	2c1	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
Implementation of KI decision	3b1			P	M	M	M					M
Implementation of protective actions for special populations - EOCs	3c1	M										
Implementation of protective actions for Schools	3c2	M										
Implementation of traffic and access control	3d1	M										
Impediments to evacuation are identified and resolved	3d2	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	P					
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
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											
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 2/7)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		VT VY FST-2	VT VY FST-3	VT Lab	Brattleboro EOC	Dummerston EOC	Guilford EOC	Halifax EOC	Vernon EOC	NH SEOC	NH 911	NH State Police
Emergency Operations Management												
Mobilization	1a1				M	M	M	M	M	M		
Facilities	1b1								M			
Direction and Control	1c1				M	M	M	M	M	P		
Communications Equipment	1d1	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	
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1									M		
Radiological Assessment and PARs	2b1									M		
Decisions for the Plume Phase -PADs	2b2									M		
PADs for protection of special populations	2c1									M		
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	M	M		M	M	M	M	M			
Implementation of KI decision	3b1	M	M		M	M	M	M	M	M		
Implementation of protective actions for special populations - EOCs	3c1				M	M	M	M	M			
Implementation of protective actions for Schools	3c2				A	M	M	M	M			
Implementation of traffic and access control	3d1				M	M	M	M	M	M		
Impediments to evacuation are identified and resolved	3d2				N	M	M	M	M	M		
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	M	M									
Laboratory operations	4c1			M								
Emergency Notification and Public Info												
Activation of the prompt alert and notification system	5a1				M	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				P	P			P			
Emergency information and instructions for the public and the media	5b1				M	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 3/7)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		NH VY JIC	NH State Police Keene	NH VY FMT-1	NH VY FMT-2	NH SWP	SWNHDFMA	NH VT EOF	NH Cheshire Cnty Dispatch	WKNE	Chesterfield EOC	Hinsdale EOC
Emergency Operations Management												
Mobilization	1a1	M				M		M			M	M
Facilities	1b1											
Direction and Control	1c1	M	M				M	M	M		M	M
Communications Equipment	1d1	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
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1							M				
Radiological Assessment and PARs	2b1							M				
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	M	M	M	M			M			M	M
Implementation of KI decision	3b1	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
Implementation of traffic and access control	3d1		M								M	M
Impediments to evacuation are identified and resolved	3d2		M								M	M
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			M	M							
Field Teams obtain sufficient information	4a2			M	M			M				
Field Teams Manage Sample Collection Appropriately	4a3			P	A							
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						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										P	N
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											
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 4/7)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Richmond EOC	Swanzey EOC	Winchester EOC	Keene EOC	MA SEOC	MA 211	State Police Troop B, Northampton	State Police Troop B, Shelburne Falls	MA WP Shelburne	MA VY EOF	MA VY JIC
Emergency Operations Management												
Mobilization	1a1	M	M	M	M	M				M	M	M
Facilities	1b1											
Direction and Control	1c1	P	M	M	M	M				M	M	M
Communications Equipment	1d1	M	M	M	M	M	M			M	M	M
Equip & Supplies to support operations	1e1	M	M	M	M	M	M				M	M
Protective Action Decision Making												
Emergency Worker Exposure Control	2a1					M					M	
Radiological Assessment and PARs	2b1					M					M	
Decisions for the Plume Phase -PADs	2b2					M						
PADs for protection of special populations	2c1					M						
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	M	M	M				M	M		M	M
Implementation of KI decision	3b1	M	M	M		M			M		M	M
Implementation of protective actions for special populations - EOCs	3c1	M	M	M								
Implementation of protective actions for Schools	3c2	M	M	M								
Implementation of traffic and access control	3d1	M	P	M		M						
Impediments to evacuation are identified and resolved	3d2	M	M	M								
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										M	
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	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	M	M	M								
Emergency information and instructions for the public and the media	5b1	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 5/7)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		MA VY FMT-1	MA VY FMT-2	MA RIII/IV	Bernardston EOC	Colrain EOC	Gill EOC	Greenfield EOC	Leyden EOC	Northfield EOC	Warwick EOC
Emergency Operations Management											
Mobilization	1a1			M	M	M	M	M	M	M	M
Facilities	1b1										
Direction and Control	1c1			M	M	M	M	M	M	M	M
Communications Equipment	1d1	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
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	M	M	M	M	M	M	M	M	M	M
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	M	M	M
Implementation of protective actions for Schools	3c2				M	M	M	M	M	M	M
Implementation of traffic and access control	3d1			M	M	M	M	M	M	M	M
Impediments to evacuation are identified and resolved	3d2			M	M	M	M	M	M	M	M
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	M	M								
Field Teams obtain sufficient information	4a2	M	M								
Field Teams Manage Sample Collection Appropriately	4a3	M	M								
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				M	M	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				M	M	M		M	P	M
Emergency information and instructions for the public and the media	5b1				M	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 6/7)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Northampton KI Dispensing Site	Greenfield RC	Gill/Montague School District	Full Circle School	Gill Elementary	Holten Nursing Home	Dummerston Elementary School	Ft. Drummer State Park	Green Mountain Camp	Hidden Acres Camp
Emergency Operations Management											
Mobilization	1a1		M								
Facilities	1b1										
Direction and Control	1c1		M								
Communications Equipment	1d1		M								
Equip & Supplies to support operations	1e1		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										
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1										
Protective Action Implementation											
Implementation of emergency worker exposure control	3a1		M								
Implementation of KI decision	3b1	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			
Implementation of traffic and access control	3d1		M								
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		M								
Mon / decon of emergency worker equipment	6b1		M								

Temporary care of evacuees	6c1										
Transportation and treatment of contaminated injured individuals	6d1										

Table 3.1 - Summary of Exercise Evaluation (Continued. page 7/7)

DATE: 2011-05-03 SITE: Vermont Yankee Power Station, VT M: Met, A: ARCA, D: Deficiency, P: Plan Issue, N: Not Demonstrated		Infant Toddler Center	Jen's Child Care	KOA Camp	Marie Child Care	Robins Child Care	Frog HollowDay Care	Pitter Patter Day Care	Pine Heights Nursing Home	Vernon Preschool	Montague Turner's Fall MHS
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										
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
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, 3.b.1, 3.d.1, 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.b.1.

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

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.

CORRECTIVE ACTION DEMONSTRATED: During the May 3, 2011 Vermont Yankee Exercise, the Massachusetts Public Information staff at the Massachusetts EOC disseminated appropriate News Releases supporting the Emergency Action Directives authorized by the Massachusetts Emergency Management Agency Director. These News Releases provided clear information to the public and were disseminated in a timely manner.

g. PRIOR ISSUES - UNRESOLVED: None

3.3.1.2 MA 211 Call 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 Warning Point - Shelburne

a. MET: 1.a.1, 1.c.1, 1.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

3.3.1.4 MA (VY) Emergency Operations Facility

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 3.a.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 (VY) 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

3.3.1.6 MA (VY) Field Monitoring Team-1

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1, 4.a.2, 4.a.3.
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 (VY) Field Monitoring Team-2

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

3.3.1.8 MA Region III/IV EOC

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.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 Risk Jurisdictions

3.3.2.1 MA State Police Troop B, Northampton

a. MET: 3.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

3.3.2.2 MA State Police Troop B, Shelburne Falls

a. MET: 3.a.1, 3.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

3.3.2.3 Bernardston 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.a.3, 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

3.3.2.4 Colrain 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.a.3, 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 Gill 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.a.3, 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

3.3.2.6 Greenfield 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

3.3.2.7 Leyden 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.a.3, 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

3.3.2.8 Northfield 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: 3.a.1.

ISSUE NO.: 67-11-3a1-A-13

CRITERION: OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers IAW plans and procedures. Emergency workers periodically and at the end of each mission read and record dosimeter reading. (NUREG-0654, K.3)

CONDITION: During equipment issuance to Emergency Workers the dosimetry coordinator in Northfield issued a packet containing a CD V-742, 0-200 R Direct Reading Dosimeter instead of a 0-200 mR dosimeter. Plans and procedures call for the issuance of two DRDs: (1) 0-20 R and (2) 0-200 mR.

POSSIBLE CAUSE: The dosimetry coordinator was acting in this position for the first time and was not experienced in this job. He inadvertently picked up a box of CD V-742 dosimeters and did not to assure that they were the correct range to be issued.

REFERENCE: NUREG 0654, K. 3. a, b

EFFECT: The CD V-742 is incapable of measuring exposures at the reporting levels required in the plan for Northfield responders (100 mR and 175 mR). The CD V-742 measures from 0-200 R. The responders would be unable to accurately monitor their personal exposure and could receive radiation exposure above the stated limits.

CORRECTIVE ACTION DEMONSTRATED: Distribution of correct dosimetry was adequately redemonstrated.

It is recommended that responders acting as dosimetry coordinators be sufficiently

trained to recognize the correct dosimeters for issuance. It is also recommended that the supplies of CD V-742 dosimeters be removed from the inventory in Northfield as they are not included in the plan or procedures for issuance during an incident at Vermont Yankee.

c. DEFICIENCY: None
d. PLAN ISSUES: 5.a.3.

ISSUE NO.: 67-11-5a3-P-14

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

CONDITION: Using a Northfield Police Cruiser, alert notification routes numbers 1 and 3 could not be completed in the required criterion times of approximately 45 minutes. Route #1 took 51:15 minutes; Route #3 took 60:00 minutes.

POSSIBLE CAUSE: It is possible that when the route maps were produced (unknown date) there was not the build-up of residential homes with extremely long drive-ways which require a vehicle to almost drive to the residence to make the emergency announcement.

REFERENCE: NUREG-0654; E. 6, Appendix 3.B.2.c

EFFECT: Officials cannot complete the route alerting tasks in the required time of approximately 45 minutes.

RECOMMENDATION: Conduct an analysis of all of Northfield's five routes. Consider reallocating roadways from routes #1 and #3 to the other three routes, or adding additional route(s). Consider changing the plan to specify the types of vehicle(s) that could be used for each route, because Routes 1 and 3 are not suitable for fire service trucks due to narrow and unpaved roads along with the long hilly

driveways.

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

3.3.2.9 Warwick 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.a.3, 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

3.3.2.10 Gill/Montague School District

a. MET: 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 Full Circle School

a. MET: 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 Gill Elementary School

a. MET: 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

3.3.3 Support Jurisdictions

3.3.3.1 MA Dept. of Public Health (Northampton KI Dispensing Site)

a. MET: 3.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 Greenfield Community College

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 3.a.1, 3.b.1, 3.d.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: 6.b.1.

ISSUE NO.: 67-05-6b1-A-25

ISSUE: Contaminated personnel traveling through the secondary monitoring room were potentially contaminating the floor. There was no provision for a masslinn mop for the staff in the secondary monitoring to use on the portion of the floor where the contaminated individuals walked.

CORRECTIVE ACTION DEMONSTRATED: The Greenfield Community College

Reception Center staff successfully demonstrated the use of masslinn mops during the 2011 exercise. They also revised plans and procedures to ensure no cross-contamination occurred.

g. PRIOR ISSUES - UNRESOLVED: None

3.3.3.3 Montague Turner's Fall Middle High School

a. MET: 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

3.3.4 New Hampshire Jurisdictions

3.3.4.1 NH State Emergency Operations Center

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

ISSUE NO.: 67-11-1c1-P-01

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: Some municipalities experienced problems interpreting the content of the emergency status portrayed on 301B Forms sent from the NH State EOC.

POSSIBLE CAUSE: The form is intended to provide a compilation of the status of emergency events and activities. When a new form is generated by the staff at the NH State EOC and distributed, recipients have difficulty identifying new events that have occurred since the last form was distributed.

REFERENCE: NUREG-0654, A.1.d; A.2a; NH State Emergency Operations Plan, Radiological Emergency Response for Nuclear Facilities Incident Annex, Chapters 5 and 6; NH Radiological Emergency Response for Nuclear Facilities, Attachment A, Implementing Procedures for State Agencies, par XII and Form 301B – Status Report.

EFFECT: Recipients must obtain a copy of the last status report and compare them to identify the changes that have occurred during the reporting period. This process created unnecessary delays in reading and understanding the current state and relaying it to the EOC staff.

RECOMMENDATION: The NH Homeland Security and Emergency Management staff should revisit the cited procedures and revise the process to clarify the purpose and content of the status report. Establish a process whereby a second reviewer would check each drafted form for accuracy before dissemination.

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

3.3.4.2 NH 911 Call 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

3.3.4.3 NH State Police Communications Center, NH State Warning Point

3.3.4.4 NH (VY) 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

3.3.4.5 NH State Police Troop C, Keene

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

3.3.4.6 NH (VY) Field Monitoring Team-1

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1, 4.a.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 4.a.3.

ISSUE NO.: 67-11-4a3-P-16

CRITERION: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams must 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.8., 9., 11)

CONDITION: The New Hampshire Field Monitoring Team (NHFMT) equipment includes a SAIC RADeC0 Model H809C air sampler. A tag on the air sampler indicates the run time to collect a ten cubic foot air sample at a flow rate of one cubic foot per minute corrected for different temperatures and air pressures. When one of

the air samplers was run in the field the flow rate meter was indicating 0.7 cubic foot per minutes and when the operability check was performed on another air sampler the flow rate was almost 1.5 cubic feet per minute. The DPHS Field Team Manual, Chapter Four, Operating Procedures, Section 4.4 Air Sampling, step 9, instructs the team to enter 10 cubic feet as the volume on entry H on form 300V.

POSSIBLE CAUSE: The DPHS Field Team Manual, Chapter Four Operating Procedures, Section 4.4 Air Sampling, step 9 instructs the team to enter 10 cubic feet as the volume on entry H on form 300V without noting or correcting for the air flow indicated on the air flow meter or correcting the run time based upon the flow rate to obtain the required 10 cubic feet sample.

REFERENCE: DPHS Field Team Manual, Chapter four Operating Procedures, Section 4.4 Air Sampling,
NUREG 0654 I.9

EFFECT: If the air flow is lower or higher than 1 cubic foot per minute and 10 cubic feet is used without correcting for air flow, the resulting concentrations of radioiodine and/or particulates calculated using an incorrect volume could result in lower or higher concentrations than actually present, which in turn could affect Protective Action Recommendations.

RECOMMENDATION: It is recommended that the Field Team Manual Chapter 4, Section 4.4 and form 300V be revised to have the NHFMT note the air flow meter reading at the beginning of the air sample run, record the air flow on form 300A, and run the air sampler based upon the actual air flow for the time needed to collect a minimum of 10 cubic feet of air. Then train NHFMT members on the revised procedure.

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

3.3.4.7 NH (VY) Field Monitoring Team-2

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1, 4.a.2.
b. AREAS REQUIRING CORRECTIVE ACTION: 4.a.3.

ISSUE NO.: 67-11-4a3-A-15

CRITERION: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams must 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.8., 9., 11)

CONDITION: On multiple occasions the New Hampshire Field Monitoring Teams (NHFMT) demonstrated inadequate knowledge, skill and training related to monitoring and sampling equipment and measurement procedures. On one occasion one of the NHFMT members entered the background exposure rate of the CDV 718A in block I "Background count rate cpm" of the Offsite Sample Log (Form 300V, Vol. 8/Rev. 13). In this case the background of the instrument (Eberline RM-14) used to count air sample filters and cartridges should have been entered. Another member of the NHFMT had difficulty establishing the background of the correct instrument after the team was redirected to establish an appropriate background measurement. The individual had the RM-14 turned on but was not seeing any response by the dial. The field team member was then instructed to scale the instrument down from the X 100 setting to X 1 such that a response could be seen and background recorded. At this time, another monitoring team member held both the filter and subsequently the silver zeolite cartridge in his hand while the other member counted the sample.

Toward the end of the exercise, all three radiation detection instruments were brought to the back of the vehicle and the NHFMT members were asked to describe the purposes of each instrument. The FMT 1 and 2 expressed a fair understating of the CDV 718A, but had difficulty describing what the RM-14 was used for and had no understanding of the PIC-6B Ion Chamber's use as it pertained to their activities.

POSSIBLE CAUSE: NHFMT members did not receive adequate training.

REFERENCE: NUREG 0654 O.4.C

EFFECT: Field monitoring team personnel are required to have the appropriate knowledge, skills and training in order to conduct field sampling and measurements. These measurements are then provided to the Monitoring Team Coordinator (MTC) who is responsible for providing data and recommendations to the rest of the response organization. Providing inaccurate field monitoring data could affect Protective Action decisions.

RECOMMENDATION: Provide adequate and effective training to field monitoring team personnel.

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

3.3.4.8 NH State Warning Point

a. MET: 1.a.1, 1.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

3.3.4.9 NH (VY) Emergency Operations Facility

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

3.3.4.10 NH Cheshire County Sheriff's Dispatch

a. MET: 1.c.1, 1.d.1, 1.e.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

3.3.4.11 WKNE Radio Station

a. MET: 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

3.3.5 Risk Jurisdictions

3.3.5.1 Chesterfield 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: 5.a.3.

ISSUE NO.: 67-11-5a3-P-17

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

CONDITION: There is not an effective process for back-up route-alerting in Chesterfield in the event of a specific siren failing.

POSSIBLE CAUSE: Currently, there is no siren coverage map available in the town. Without the siren coverage map, the town cannot identify what roads would need to be covered in the event of a siren failure. Thus, there has been no analysis performed to map each of the 38 routes to a specific siren coverage area.

REFERENCE: NUREG-0654, E.6; Appendix 3.B.2.c

EFFECT: In the event of a specific siren failure, the town could not readily identify areas for which to perform backup route-alerting.

RECOMMENDATION: The Town of Chesterfield should obtain a current siren coverage map and identify routes specific to each siren coverage area.

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

3.3.5.2 Hinsdale 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: 5.a.3.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.5.3 Richmond 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.a.3, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 1.c.1.

ISSUE NO.: 67-11-1c1-P-18

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 Richmond EOC used outdated plans and procedures (REV 13).

POSSIBLE CAUSE: At the beginning of the exercise in Richmond, the Team Lead asked the Fire Chief what version of the Operating procedures he was going to use. The Chief stated that although they had Rev 14, which they had recently received, the team had not been trained on or reviewed Rev 14, so Richmond made a decision to use Rev 13 plans and procedures that the response team had been trained in.

REFERENCE: NUREG 0654/FEMA-REP-1, a.1.d; a.2.a; c.1.a; Town of Richmond Vol. 13/Rev. 14

EFFECT: There were no obvious adverse effects with using the Rev 13 plans and procedures. However, confusion could result during coordination with other towns who were using the updated Rev 14.

RECOMMENDATION: Have the Emergency response community in Richmond, NH train on and review the Rev 14 plans and procedures.

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

3.3.5.4 Swanzey 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.2, 5.a.1, 5.a.3, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 3.d.1.

ISSUE NO.: 67-11-3d1-P-19

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

CONDITION: Swanzey Traffic Control procedures (Section 3.7 of Vol. 17/Rev 14) are inaccurate and conflicting.

POSSIBLE CAUSE: Revision process for Swanzey Traffic Control procedures did not produce accurate procedures. Examples of inaccuracies include Swanzey Traffic Control Post (other parts of procedures and maps reference Traffic Control Points) SW-01 intersection change, SW-07 not taking in to account a dead end road, SW-10 being a duplicate, and SW-20 and SW-22 referencing incorrect road names. The Traffic Control Summary lists resources required but labels columns State, Local and Total whereas Total is not indicative of the post/point being a guide and not Total personnel required.

REFERENCE: Swanzey Traffic Control procedures (Section 3.7 of Vol. 17/Rev 14).

EFFECT: Personnel in charge of establishing traffic control do not have accurate procedures or diagrams to support establishing traffic control in a timely manner.

RECOMMENDATION: Review the traffic access control procedures, summary, and drawings, and revise them to be accurate (e.g. Summary Table numbers and road names).

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

3.3.5.5 Winchester 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.a.3, 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

3.3.6 Support Jurisdictions

3.3.6.1 Southwestern New Hampshire District Fire Mutual Aid Local Warning Point

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

3.3.6.2 Keene Local EOC

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.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

3.3.7 Vermont Jurisdictions

3.3.7.1 Vermont State Emergency Operations Center

a. MET: 1.a.1, 1.b.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 2.c.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: 2.b.2.

ISSUE NO.: 67-11-2b2-P-02

CRITERION: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make PADs for the general public

including KI if ORO policy.

CONDITION: At the Site Area Emergency the Vermont State EOC Manager, upon advice from the Senior State EOC Staff, reached a decision to initiate a precautionary evacuation at 1041. This was 14 minutes prior to the Emergency Alert System (EAS) activation at 1056. The Vermont Risk Communities in the Emergency Planning Zone (EPZ) responsible for local traffic and access control were given from 6 – 12 minutes notice prior to release of the EAS message to EAS radio broadcasters. This timing may not have allowed sufficient time to ensure all required personnel were mobilized, briefed and equipped and had adequate time to travel to and set up at local Traffic and Access Control Points (TACPs) as required by their local plans and procedures. Arrangements for dealing with potential impediments to evacuation were also not implemented prior to the onset of the evacuation.

POSSIBLE CAUSE: Plans and procedures may be unclear in outlining clear steps for how to implement traffic and access control. Although VT Risk Community Implementing Procedures state, “Assign personnel to Traffic and/or Access Control Points with proper dosimetry and potassium iodide…” and “Coordinate delivery of traffic control equipment with the Highway Branch Director”, requirements for coordination with the state on that process are unclear.

REFERENCE: NUREG 0654 J.9; J.10.j; J.10.k; Vermont Radiological Emergency Response Plan Traffic and Access Control Manual; Radiological Emergency Response Implementing Procedure Town of Guilford Police Branch Director IP-4 SAE/GE, Step 5C and 6

EFFECT: The lack of adequate confirmation that Risk Communities had obtained and delivered the necessary equipment to TACP locations could result in an evacuation that was initially uncontrolled. Without TACPs in place to facilitate an evacuation, additional vehicles could be allowed to enter the area, thus adding to the number of individuals that may be affected by a radiological release and delaying those that are trying to leave the affected area.

RECOMMENDATION: Ensure that all plans and procedures related to traffic and access control are consistent and clear. Conduct training to ensure all parties are

aware of the necessary traffic and access control preparations when a PAD is issued for an evacuation.

e. NOT DEMONSTRATED: 1.c.1.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.7.2 Vermont State Emergency Operations Center - Day 2

a. MET: 1.c.1, 2.d.1, 2.e.1, 3.e.1, 3.e.2, 3.f.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: 1.c.1.

ISSUE NO.: 67-05-1c1-A-02

ISSUE: During the Ingestion Phase portion of the exercise on Day 3, The Incident Field Office only had the Exclusion Area Map. They were unaware of other maps showing the food control zones as established at the State Emergency Operations Center. Traffic and access control points were only established for restricting access into the Exclusion Zone (restricted area). It was the IFO?s understanding that the Exclusion Zone was the same area as the food control and that the access control point for the exclusion area was also for the food control zone.

CORRECTIVE ACTION DEMONSTRATED: The State of Vermont has consolidated all post-plume phase operations in the State EOC at Waterbury. The Incident Field Office in Dummerston was not in operation for the post-plume phase of the May 3-4, 2011 exercise. The State EOC had accurate maps during the exercise.

g. PRIOR ISSUES - UNRESOLVED: None

3.3.7.3 Vermont EOF

a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.1, 3.a.1, 4.a.2.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 3.b.1.

ISSUE NO.: 67-11-3b1-P-03

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

CONDITION: State of Vermont staff located at the Emergency Operations Facility (EOF) did not demonstrate the capability to maintain documentation of which Vermont individuals located in the EOF ingested Potassium Iodide (KI). After ingesting KI once authorization was received the staff did not record the ingestion on any records or make notification of administration.

POSSIBLE CAUSE: No procedural guidance was apparent in the EOF Vermont Emergency Management Liaison or Vermont Department of Health Liaison procedures of a requirement to document ingestion of KI. A second possible cause is that the training may have not covered this item adequately.

REFERENCE: EOF Vermont Emergency Management Liaison procedure, Vermont Department of Health Liaison procedure, NUREG J.10.e

EFFECT: Organizations may lose track of their emergency workers' ingestion of KI and may not advise them when it is necessary to take additional doses for an event that lasts more than one day.

Individuals may forget when they last took KI, causing them to take additional doses of KI at inappropriate times, i.e. either too early or too late. Taking too early may increase chance of side effects.

RECOMMENDATION: Develop procedural guidance on a method to record the ingestion of KI which includes an appropriate form for documentation. Include guidance on who should be notified once ingestion of KI has been accomplished.

Once procedural guidance is developed, provide additional training to appropriate staff

ISSUE NO.: 67-11-3b1-P-04

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

CONDITION: Procedural guidance in the Radiological Plume Tracking Teams, Plume Tracking Team Director, IP-1 states "Ensure that team members have self administered KI at least thirty (30) minutes before arrival near a potential plume or actual radiological plume. During the exercise the Dose Assessment staff and the Radiological Health Advisor instructed the Plume Tracking Team Director (PTTD) to dispatch the teams to obtain radiological measurements and air samples due to the release that had occurred. This was to be done even though 30 minutes had not passed since the ingestion of KI by the Plume Tracking Teams had occurred.

POSSIBLE CAUSE: The PTTD procedure is in conflict with the Radiological Health Advisor Implementing Procedure, page 7 of 30, Step 8.c. This procedure states that "Ensuring emergency workers are instructed to ingest KI prior to exposure to the plume, where best performance is provided with KI dosing 30 minutes before exposure and KI dosing up to three hours after exposure to the plume". The States policy on KI use is not consistent in these two procedures.

REFERENCE: Radiological Health Advisor Implementing Procedure, Radiological Plume Tracking Teams, Plume Tracking Team Director, IP-1, NUREG J.10.f

EFFECT: The dispatch of the teams was delayed less than five minutes during the exercise due to the uncertainty caused by the inconsistent procedures. In this case the short delay did not cause any problems. However, this delay could be longer if the field teams were ready for dispatch to the field but the KI administration order had not yet been given.

RECOMMENDATION: Revise all procedures to accurately reflect the State's position on KI use. The revisions should be consistent with each other to avoid confusion in the future.

Once procedural guidance is developed, provide additional training to appropriate staff.

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

3.3.7.4 Vermont Joint Information Center

a. MET: 1.a.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: 1.c.1.

ISSUE NO.: 67-11-1c1-P-05

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 Vermont Yankee Joint Information Center (JIC) plan does not include detailed information in several important areas.

The plans for the Vermont JIC staff consist of 6 pages of checklists; 2 pages each for 3 positions. The majority of information in these checklists is redundant and basic. There is no information that addresses the tasks and responsibilities that are traditionally accomplished by the JIC.

The plan does not contain specific instructions for how to evacuate and relocate the JIC if necessary, even though it is located within the 10-mile Emergency Planning Zone (EPZ). During the exercise, the town was evacuated and the Vermont JIC staff had discussions regarding their safety and on when they were supposed to evacuate. The plan states that the JIC is "not a hardened facility and may have to be evacuated if downwind from radiological release." However, there is no direction for the staff other than, "If conditions mandate an evacuation of the Joint Information Center, follow evacuation instructions and relocate to pre-determined location. Simply transport selves and computers." While other portions of the VT plan states the location of the alternate facility, there is no information on where the evacuation instructions will come from, at what point the decision will be made and who will make the decision. There is also no information on whether the staff should report to a monitoring/decontamination center upon leaving the EPZ.

There is no plans regarding distribution, reading or recording of dosimeters. The JIC checklists state that personnel should "obtain dosimeter if not contained in 'go kit'". There is no information on where additional dosimeters should be obtained.

There was no procedural guidance as to what JIC personnel are to do in the event their dosimeters showed a received dose. The informational card located in the dosimetry kits indicated that at a reading of 1 R, persons should contact their agency. However, staff was unsure what that meant and whom to contact. Upon questioning, the staff called the State Emergency Operations Center (EOC), who stated they were unsure and to try Department of Health. Upon calling the Department of Health, who was also unsure of direction to give, the JIC staff was then given the name and number of a person at the EOF. At this point, more than 30 minutes later, she added the name to the informational white board in the work room, and stated she was told that if she had an "immediate concern" that she should contact this person.

Lastly, the VT plan dated February 17, 2011, Logistics Section Chief Attachment lists "Radiological Instruments Potassium Iodide and Other Supplies". However, under "If
there is a need for additional Potassium Iodide, the following is a list of likely sources: "– no list follows this statement. Plans also do not designate a

spokesperson.

POSSIBLE CAUSE: JIC staff may not have had input into the development of their plans, leading to some gaps.

REFERENCE: NUREG 0654/FEMA-REP-1 G.4.a,b; K.3.a, 4; J.10.e

EFFECT: If the JIC plan is unclear in these areas, VT personnel at the JIC may receive unnecessary dose if they are not evacuated from the area prior to arrival of the plume. Additionally, by not having information regarding where dosimetry or KI can be obtained, there may be a delay in getting necessary dosimetry to personnel. By not having information and knowledge regarding who to contact and what is to be done at various reporting levels, JIC staff could be harmed by receiving excess dose. Additionally, JIC teams who are not as familiar with the unwritten procedures for the JIC would have a difficult time completing all required functions.

RECOMMENDATION: Create a more detailed JIC plan and checklist. Utilize the JIC staff to assist in writing the plan. The plan could address the following:

•Who, by title, makes the determination to evacuate personnel at the JIC, and what criteria determine when personnel will be evacuated.
•Information regarding personnel reporting to a monitoring/decontamination facility, if necessary.
•A list of available quantities and locations of dosimetry and KI either listed in plan or referred to in the plan.
•Who, by title, is the designated spokesperson and alternates.
•Information on who, by title, JIC staff are to contact in the event of a dosimetry reading, and ensure staff and dosimetry contact person are trained on the plan.

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

3.3.7.5 VT Plume Tracking Team-1

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.1, 4.a.2, 4.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: 4.a.3.

ISSUE NO.: 67-11-4a3-A-06

CRITERION: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams must 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.8., 9., 11)

CONDITION: The Vermont Plume Tracking Team 1 did not initially conduct a cartridge blank count.

Step 5 A of the Radiological Plume Tracking Team Members procedure requires teams to: "With the Ludlum 2220/2221 perform a cartridge blank count with an unused silver zeolite cartridge for an actual emergency or TEDA impregnated air cartridge for training activities."

Based on the procedures, this should be performed at the staging area. However, this was not completed in the staging area or at any time before entering the plume.

POSSIBLE CAUSE: Vermont Plume Tracking Team 1 skipped this step on the checklist/implementing procedures.

All of the other steps under "Air Sample Preparations" were performed properly in the staging area. Skipping this step appeared to be an oversight.

REFERENCE: Radiological Emergency Response Implementing Procedure, Radiological Plume Tracking Team Members, page 5 of 12, Step 5 A

EFFECT: Failure to establish a background count provides no means for calculating the net count on the silver zeolite cartridge. This net count is the best means of determining dose contribution due to radioactive iodine in the plume.

Counting an unused cartridge in a known clean area after exiting the plume will provide the necessary measurement after the fact.

CORRECTIVE ACTION DEMONSTRATED: Plume Tracking Team members should meticulously reference and follow written procedures.

The procedural step was successfully redemonstrated.

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

3.3.7.6 VT Plume Tracking Team-2

a. MET: 1.d.1, 1.e.1, 3.a.1, 3.b.1, 4.a.2, 4.a.3.
b. AREAS REQUIRING CORRECTIVE ACTION: None
c. DEFICIENCY: None
d. PLAN ISSUES: 4.a.1.

ISSUE NO.: 67-11-4a1-P-07

CRITERION: Field teams are equipped to perform field measurements of direct radiation exposure (cloud & ground shine) and to sample airborne radioiodine and particulates (NUREG-0654, H.10., I.8., 9., 11.)

CONDITION: The Vermont Plume Tracking Team procedure does not include a method for source checking the Ludlum Model 14C high range detector prior to entering a radiation field where the high range detector must be used.

POSSIBLE CAUSE: The Ludlum Model 14C has two detectors; a low range detector attached by an electrical cable and an internal high range detector. The low range detector is the primary detector and is operationally checked prior to use with a small Cesium 137 radioactive source. A radioactive source response check is not practical for the high range detector on the Ludlum Model 14C (it would require a highly

radioactive source).

The high range detector is only used in radiation fields above 200 mR/hr and Plume Tracking Teams will not generally enter those areas. However, the Plume Tracking Team turn-back exposure limit is 1000 mR/hr and they could encounter exposure rates where the high range detector would be needed (any area they enter that is above 200 mR/hr).

REFERENCE: NUREG-0654, H.10; Radiological Plume Tracking Teams, IP-2 Plume Tracking Team Members, Revision 4, February 2011; ANSI N323A, 1997, American National Standard Radiation Protection Instrumentation Test and Calibration, Portable Survey Instruments, Section 4.8, Source Response Check

EFFECT: Plume Tracking Team members could take inaccurate radiation measurements if they use the Ludlum Model 14C high range detector without conducting an operational check on that detector. This could result in excess radiation exposure to team members or inaccurate radiation measurements that could be used to make inaccurate dose projections and protective action recommendations for the public.

RECOMMENDATION: If the Ludlum 14C high range detector cannot be source checked by conventional means, Vermont should develop a method to demonstrate that the high range internal detector is operable prior to entering an area where only the Ludlum Model 14C high range detector can be used.

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

3.3.7.7 Vermont Rockingham State Police

a. MET: 1.a.1, 1.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

3.3.7.8 Vermont Alternate Warning Point

a. MET: 1.a.1, 1.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

3.3.7.9 Vermont 211 Call 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

3.3.7.10 VT (VY) Field Sampling Team Coordinator

a. MET: 1.c.1, 1.d.1, 1.e.1, 3.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

3.3.7.11 VT (VY) Field Sampling Team-1

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

3.3.7.12 VT (VY) Field Sampling Team-2

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

3.3.7.13 VT (VY) Field Sampling Team-3

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

3.3.7.14 VT State Laboratory

a. MET: 1.e.1, 4.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

3.3.8 Risk Jurisdictions

3.3.8.1 Brattleboro 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.d.1, 5.a.1, 5.b.1.
b. AREAS REQUIRING CORRECTIVE ACTION: 3.c.2.

ISSUE NO.: 67-11-3c2-A-09

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

CONDITION: Windham Southeast Supervisory Union representatives did not stay informed about certain important exercise details, such as the wind direction and evacuation decisions.

In addition, lack of communication of school decisions to the rest of the EOC caused disorder surrounding those decisions. As a result, the Joint Information Center (JIC) issued confusing information concerning the evacuation of schoolchildren. This caused questions as to why parents (i.e., the general public) were told to go to reception centers in opposite directions to where school children were sent. Clarifying information on the actual location of school children was not confirmed until 1300, several hours after the initial media briefing at 0954 concerning the evacuation of school children.

POSSIBLE CAUSE: Town of Brattleboro School Superintendent Implementing Procedure-16, page 7, states, “Inform the Emergency Management Director of school actions taken” and “Coordinate issuing news releases regarding the status of school emergency response activities with the Public Information Officer…”. School EOC representatives may not have been aware of these procedures, and seemed to not be aware of the specifics of the emergency situation (wind direction and evacuation decisions).

REFERENCE: NUREG-0654, J.10.c.d.g.; Town of Brattleboro School Superintendent Implementing Procedure-16

EFFECT: Lack of communication and awareness during a real event could cause

students to be transported through a plume. In addition, the confusion could cause parents to be unaware of where their children were located.

RECOMMENDATION: Conduct training for the school EOC representatives on the importance of their role in the EOC, and how their decisions affect public health and safety.

c. DEFICIENCY: None
d. PLAN ISSUES: 5.a.3.

ISSUE NO.: 67-11-5a3-P-10

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

CONDITION: The route demonstrated in the town of Brattleboro, VT, took longer than the allowable 45 minutes. The Fire Lieutenant in the fire department selected "Route Alerting Zone six" from the ten routes available, and the vehicle selected was a Fire Department cruiser. The route was completed in 72 minutes, which was in excess of the allowable 45 minutes. The driver performed as he should have, and drove every road and driveway on the map or not on the map and announced (simulated) the alert message as necessary.

POSSIBLE CAUSE: The Route Alerting Zone six Map was updated in 2003, and may not have been verified since then. There were several driveways that were long (a quarter mile or longer) and difficult to traverse.

REFERENCE: NUREG-0654, E.6, Appendix 3. B.2.c

EFFECT: Using outdated maps could prevent the completion of the alerting task in a timely manner, thereby not alerting Brattleboro citizens of a possible protection action.

RECOMMENDATION: Update map(s) to reflect any and all building construction and roadways since the original map was produced. While updating the maps, plan for an appropriate vehicle to be able to traverse the routes easily at a safe speed in order to complete the task. Consider adding routes or splitting routes up to be covered by multiple vehicles in order to cover all relevant areas.

e. NOT DEMONSTRATED: 3.d.2.
f. PRIOR ISSUES - RESOLVED: None
g. PRIOR ISSUES - UNRESOLVED: None

3.3.8.2 Dummerston 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: 5.a.3.

ISSUE NO.: 67-11-5a3-P-08

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

CONDITION: The route demonstrated in the town of Dummerston, VT, took longer than the allowable 45 minutes. The Emergency Management Director (EMD) chose route three from five routes in the town. The back-up alerting drill was completed in one hour and twenty-nine minutes.

POSSIBLE CAUSE: The route three map had not been updated or validated for several years, and there were new buildings (residences) along and off the route. There were several long driveways that were not on the map; these residences would need to be alerted in the event of a protective action. In addition, the narrow and unpaved roads limited the speed of the route alerting vehicle.

REFERENCE: NUREG-0654, E.6, Appendix 3. B.2.c

EFFECT: Using outdated maps could prevent the completion of the alerting task in a timely manner, thereby not alerting Dummerston citizens of a possible protective action.

RECOMMENDATION: Corrective action might include ensuring that all of the driveways not on current maps be added, timing routes again and also consider adding or splitting routes or adding more resources to accomplish the task.

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

3.3.8.3 Guilford 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: 3.a.1.

ISSUE NO.: 67-11-3a1-A-11

CRITERION: OROs issue appropriate dosimetry and procedures, and manage radiological exposure to emergency workers IAW plans and procedures. Emergency workers periodically and at the end of each mission read and record dosimeter reading. (NUREG-0654, K.3)

CONDITION: The Radiological Officer failed to properly conduct the Radiological briefing the Guilford Emergency Operations Staff. The topics of exposure reporting levels and turn back values were not discussed.

POSSIBLE CAUSE: The substitute Radiological officer did not have available pre-scripted briefing document to refer to while conducting the briefing and was inadequately trained.

REFERENCE: NUREG-0654, K.3.a, b

EFFECT: Emergency workers were not properly trained in the proper procedures for the use of dosimetry.

CORRECTIVE ACTION DEMONSTRATED: The Radiological Officer was asked to review and re-demonstrate the radiological briefing, insuring that all the safety and proper procedural information was correctly conveyed.

The Radiological Briefing was successfully re-demonstrated during the Vermont Yankee Plume exercise.

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

3.3.8.4 Halifax 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

3.3.8.5 Vernon Local EOC

a. MET: 1.a.1, 1.b.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: 5.a.3.

ISSUE NO.: 67-11-5a3-P-12

CRITERION: Activities associated with FEMA approved exception areas are completed within 45 minutes following the initial decision by authorized offsite

emergency officials to notify the public of an emergency situation. Backup A&N of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary A&N system. (NUREG-0654, E.6., Appendix 3.B.2.c)

CONDITION: The route demonstrated in the town of Vernon, VT, took longer than the allowable 45 minutes. The Emergency Management Director (EMD) selected the Green Route/Sector three, and the vehicle selected was engine three. The route was completed in 53 minutes and there were six to eight long (quarter mile) resident driveways that were not accessed and given the alert message. If the alert crew conducted the alert routing to all of the long driveways the time would have been greater than 60 minutes.

POSSIBLE CAUSE: Route alerting maps currently used are undated and were probably developed before the recent residential housing was constructed (10-20 years). The long driveways were not on the map. Although the fire engine driver was experienced and clearly demonstrated his experience handling the fire engine, the fire engine used was too large and slow to traverse the route at any appreciable speed.

REFERENCE: NUREG-0654, E.6, Appendix 3. B.2.c

EFFECT: Using outdated maps and a vehicle not able to easily traverse the required route in an appreciable speed could prevent completing the task in a timely manner.

RECOMMENDATION: Update map(s) to reflect any and all building construction and roadways since the original map was produced. Consideration should be given to use a vehicle more able to traverse the route at a faster but safe speed.

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

3.3.8.6 Holten Nursing Home

a. MET: 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

3.3.8.7 Dummerston Elementary School

a. MET: 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

3.3.8.8 Fort Drummer State Park

a. MET: 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

3.3.8.9 Green Mountain Camp

a. MET: 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

3.3.8.10 Hidden Acres Camp Grounds

a. MET: 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

3.3.8.11 Infant Toddler Center

a. MET: 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

3.3.8.12 Jen's Child Care

a. MET: 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

3.3.8.13 KOA Camp Grounds

a. MET: 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

3.3.8.14 Marie Child Care

a. MET: 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

3.3.8.15 Robins Family Child Care

a. MET: 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

3.3.8.16 Frog Hollow Day Care

a. MET: 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

3.3.8.17 Pitter Patter Day Care

a. MET: 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

3.3.8.18 Pine Heights Nursing Home

a. MET: 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

3.3.8.19 Vernon Preschool

a. MET: 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

SECTION 4: CONCLUSION

The State and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were five ARCAs as a result of this exercise, three of which were successfully re-demonstrated and closed. There were no Deficiencies. Three open ARCAs from previous exercises were cleared through successful re-demonstration.

APPENDIX A: IMPROVEMENT PLAN

Issue Number: 67-11-3c2-A-09	**Criterion: 3c2**
ISSUE: Windham Southeast Supervisory Union representatives did not stay informed about certain important exercise details, such as the wind direction and evacuation decisions. In addition, lack of communication of school decisions to the rest of the EOC caused disorder surrounding those decisions. As a result, the Joint Information Center (JIC) issued confusing information concerning the evacuation of schoolchildren. This caused questions as to why parents (i.e., the general public) were told to go to reception centers in opposite directions to where school children were sent. Clarifying information on the actual location of school children was not confirmed until 1300, several hours after the initial media briefing at 0954 concerning the evacuation of school children.	
RECOMMENDATION: Conduct training for the school EOC representatives on the importance of their role in the EOC, and how their decisions affect public health and safety.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-5a3-P-10	**Criterion: 5a3**
ISSUE: The route demonstrated in the town of Brattleboro, VT, took longer than the allowable 45 minutes. The Fire Lieutenant in the fire department selected “Route Alerting Zone six” from the ten routes available, and the vehicle selected was a Fire Department cruiser. The route was completed in 72 minutes, which was in excess of the allowable 45 minutes. The driver performed as he should have, and drove every road and driveway on the map or not on the map and announced (simulated) the alert message as necessary.	
RECOMMENDATION: Update map(s) to reflect any and all building construction and roadways since the original map was produced. While updating the maps, plan for an appropriate vehicle to be able to traverse the routes easily at a safe speed in order to complete the task. Consider adding routes or splitting routes up to be covered by multiple vehicles in order to cover all relevant areas.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-5a3-P-17	**Criterion: 5a3**
ISSUE: There is not an effective process for back-up route-alerting in Chesterfield in the event of a specific siren failing.	
RECOMMENDATION: The Town of Chesterfield should obtain a current siren coverage map and identify routes specific to each siren coverage area.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-5a3-P-08	**Criterion: 5a3**
ISSUE: The route demonstrated in the town of Dummerston, VT, took longer than the allowable 45 minutes. The Emergency Management Director (EMD) chose route three from five routes in the town. The back-up alerting drill was completed in one hour and twenty-nine minutes.	
RECOMMENDATION: Corrective action might include ensuring that all of the driveways not on current maps be added, timing routes again and also consider adding or splitting routes or adding more resources to accomplish the task.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-4a3-P-16	**Criterion: 4a3**
ISSUE: The New Hampshire Field Monitoring Team (NHFMT) equipment includes a SAIC RADeC0 Model H809C air sampler. A tag on the air sampler indicates the run time to collect a ten cubic foot air sample at a flow rate of one cubic foot per minute corrected for different temperatures and air pressures. When one of the air samplers was run in the field the flow rate meter was indicating 0.7 cubic foot per minutes and when the operability check was performed on another air sampler the flow rate was almost 1.5 cubic feet per minute. The DPHS Field Team Manual, Chapter Four, Operating Procedures, Section 4.4 Air Sampling, step 9, instructs the team to enter 10 cubic feet as the volume on entry H on form 300V.	
RECOMMENDATION: It is recommended that the Field Team Manual Chapter 4, Section 4.4 and form 300V be revised to have the NHFMT note the air flow meter reading at the beginning of the air sample run, record the air flow on form 300A, and run the air sampler based upon the actual air flow for the time needed to collect a minimum of 10 cubic feet of air. Then train NHFMT members on the revised procedure.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-4a3-A-15	**Criterion: 4a3**
ISSUE: On multiple occasions the New Hampshire Field Monitoring Teams (NHFMT) demonstrated inadequate knowledge, skill and training related to monitoring and sampling equipment and measurement procedures. On one occasion one of the NHFMT members entered the background exposure rate of the CDV 718A in block I "Background count rate cpm" of the Offsite Sample Log (Form 300V, Vol. 8/Rev. 13). In this case the background of the instrument (Eberline RM-14) used to count air sample filters and cartridges should have been entered. Another member of the NHFMT had difficulty establishing the background of the correct instrument after the team was redirected to establish an appropriate background measurement. The individual had the RM-14 turned on but was not seeing any response by the dial. The field team member was then instructed to scale the instrument down from the X 100 setting to X 1 such that a response could be seen and background recorded. At this time, another monitoring team member held both the filter and subsequently the silver zeolite cartridge in his hand while the other member counted the sample. Toward the end of the exercise, all three radiation detection instruments were brought to the back of the vehicle and the NHFMT members were asked to describe the purposes of each instrument. The FMT 1 and 2 expressed a fair understating of the CDV 718A, but had difficulty describing what the RM-14 was used for and had no understanding of the PIC-6B Ion Chamber's use as it pertained to their activities.	
RECOMMENDATION: Provide adequate and effective training to field monitoring team personnel.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-1c1-P-01	**Criterion: 1c1**
ISSUE: Some municipalities experienced problems interpreting the content of the emergency status portrayed on 301B Forms sent from the NH State EOC.	
RECOMMENDATION: The NH Homeland Security and Emergency Management staff should revisit the cited procedures and revise the process to clarify the purpose and content of the status report. Establish a process whereby a second reviewer would check each drafted form for accuracy before dissemination.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-5a3-P-14	**Criterion: 5a3**
ISSUE: Using a Northfield Police Cruiser, alert notification routes numbers 1 and 3 could not be completed in the required criterion times of approximately 45 minutes. Route #1 took 51:15 minutes; Route #3 took 60:00 minutes.	
RECOMMENDATION: Conduct an analysis of all of Northfield's five routes. Consider reallocating roadways from routes #1 and #3 to the other three routes, or adding additional route(s). Consider changing the plan to specify the types of vehicle(s) that could be used for each route, because Routes 1 and 3 are not suitable for fire service trucks due to narrow and unpaved roads along with the long hilly driveways.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-1c1-P-18	**Criterion: 1c1**
ISSUE: The Richmond EOC used outdated plans and procedures (REV 13).	
RECOMMENDATION: Have the Emergency response community in Richmond, NH train on and review the Rev 14 plans and procedures.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-3d1-P-19	**Criterion: 3d1**
ISSUE: Swanzey Traffic Control procedures (Section 3.7 of Vol. 17/Rev 14) are inaccurate and conflicting.	
RECOMMENDATION: Review the traffic access control procedures, summary, and drawings, and revise them to be accurate (e.g. Summary Table numbers and road names).	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-3b1-P-03	**Criterion: 3b1**
ISSUE: State of Vermont staff located at the Emergency Operations Facility (EOF) did not demonstrate the capability to maintain documentation of which Vermont individuals located in the EOF ingested Potassium Iodide (KI). After ingesting KI once authorization was received the staff did not record the ingestion on any records or make notification of administration.	
RECOMMENDATION: Develop procedural guidance on a method to record the ingestion of KI which includes an appropriate form for documentation. Include guidance on who should be notified once ingestion of KI has been accomplished. Once procedural guidance is developed, provide additional training to appropriate staff	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-3b1-P-04	**Criterion: 3b1**
ISSUE: Procedural guidance in the Radiological Plume Tracking Teams, Plume Tracking Team Director, IP-1 states "Ensure that team members have self administered KI at least thirty (30) minutes before arrival near a potential plume or actual radiological plume. During the exercise the Dose Assessment staff and the Radiological Health Advisor instructed the Plume Tracking Team Director (PTTD) to dispatch the teams to obtain radiological measurements and air samples due to the release that had occurred. This was to be done even though 30 minutes had not passed since the ingestion of KI by the Plume Tracking Teams had occurred.	
RECOMMENDATION: Revise all procedures to accurately reflect the State's position on KI use. The revisions should be consistent with each other to avoid confusion in the future. Once procedural guidance is developed, provide additional training to appropriate staff.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-1c1-P-05	**Criterion: 1c1**

ISSUE: The Vermont Yankee Joint Information Center (JIC) plan does not include detailed information in several important areas.

The plans for the Vermont JIC staff consist of 6 pages of checklists; 2 pages each for 3 positions. The majority of information in these checklists is redundant and basic. There is no information that addresses the tasks and responsibilities that are traditionally accomplished by the JIC.

The plan does not contain specific instructions for how to evacuate and relocate the JIC if necessary, even though it is located within the 10-mile Emergency Planning Zone (EPZ). During the exercise, the town was evacuated and the Vermont JIC staff had discussions regarding their safety and on when they were supposed to evacuate. The plan states that the JIC is "not a hardened facility and may have to be evacuated if downwind from radiological release." However, there is no direction for the staff other than, "If conditions mandate an evacuation of the Joint Information Center, follow evacuation instructions and relocate to pre-determined location. Simply transport selves and computers." While other portions of the VT plan states the location of the alternate facility, there is no information on where the evacuation instructions will come from, at what point the decision will be made and who will make the decision. There is also no information on whether the staff should report to a monitoring/decontamination center upon leaving the EPZ.

There is no plans regarding distribution, reading or recording of dosimeters. The JIC checklists state that personnel should "obtain dosimeter if not contained in 'go kit'". There is no information on where additional dosimeters should be obtained.

There was no procedural guidance as to what JIC personnel are to do in the event their dosimeters showed a received dose. The informational card located in the dosimetry kits indicated that at a reading of 1 R, persons should contact their agency. However, staff was unsure what that meant and whom to contact. Upon questioning, the staff called the State Emergency Operations Center (EOC), who stated they were unsure and to try Department of Health. Upon calling the Department of Health, who was also unsure of direction to give, the JIC staff was then given the name and number of a person at the EOF. At this point, more than 30 minutes later, she added the name to the informational white board in the work room, and stated she was told that if she had an "immediate concern" that she should contact this person.

Lastly, the VT plan dated February 17, 2011, Logistics Section Chief Attachment lists "Radiological Instruments Potassium Iodide and Other Supplies". However, under "If
there is a need for additional Potassium Iodide, the following is a list of likely sources: "– no list follows this statement. Plans also do not designate a spokesperson.

RECOMMENDATION: Create a more detailed JIC plan and checklist. Utilize the JIC staff to assist in writing the plan. The plan could address the following:

•Who, by title, makes the determination to evacuate personnel at the JIC, and what criteria determine when personnel will be evacuated.
•Information regarding personnel reporting to a monitoring/decontamination facility, if necessary.
•A list of available quantities and locations of dosimetry and KI either listed in plan or referred to in the plan.
•Who, by title, is the designated spokesperson and alternates.
•Information on who, by title, JIC staff are to contact in the event of a dosimetry reading, and ensure staff and dosimetry contact person are trained on the plan.

CORRECTIVE ACTION DESCRIPTION:

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

Issue Number: 67-11-2b2-P-02	**Criterion: 2b2**
ISSUE: At the Site Area Emergency the Vermont State EOC Manager, upon advice from the Senior State EOC Staff, reached a decision to initiate a precautionary evacuation at 1041. This was 14 minutes prior to the Emergency Alert System (EAS) activation at 1056. The Vermont Risk Communities in the Emergency Planning Zone (EPZ) responsible for local traffic and access control were given from 6 – 12 minutes notice prior to release of the EAS message to EAS radio broadcasters. This timing may not have allowed sufficient time to ensure all required personnel were mobilized, briefed and equipped and had adequate time to travel to and set up at local Traffic and Access Control Points (TACPs) as required by their local plans and procedures. Arrangements for dealing with potential impediments to evacuation were also not implemented prior to the onset of the evacuation.	
RECOMMENDATION: Ensure that all plans and procedures related to traffic and access control are consistent and clear. Conduct training to ensure all parties are aware of the necessary traffic and access control preparations when a PAD is issued for an evacuation.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-5a3-P-12	**Criterion: 5a3**
ISSUE: The route demonstrated in the town of Vernon, VT, took longer than the allowable 45 minutes. The Emergency Management Director (EMD) selected the Green Route/Sector three, and the vehicle selected was engine three. The route was completed in 53 minutes and there were six to eight long (quarter mile) resident driveways that were not accessed and given the alert message. If the alert crew conducted the alert routing to all of the long driveways the time would have been greater than 60 minutes.	
RECOMMENDATION: Update map(s) to reflect any and all building construction and roadways since the original map was produced. Consideration should be given to use a vehicle more able to traverse the route at a faster but safe speed.	
CORRECTIVE ACTION DESCRIPTION:	
CAPABILITY:	PRIMARY RESPONSIBLE AGENCY:
CAPABILITY ELEMENT:	START DATE:
AGENCY POC:	ESTIMATED COMPLETION DATE:

Issue Number: 67-11-4a1-P-07	**Criterion: 4a1**
ISSUE: The Vermont Plume Tracking Team procedure does not include a method for source checking the Ludlum Model 14C high range detector prior to entering a radiation field where the high range detector must be used.	
RECOMMENDATION: If the Ludlum 14C high range detector cannot be source checked by conventional means, Vermont should develop a method to demonstrate that the high range internal detector is operable prior to entering an area where only the Ludlum Model 14C high range detector can be used.	
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: 2011-05-03, SITE: Vermont Yankee Power Station, VT

Emergency Classification Level or Event	Time Utility Declared	VT SEOC	VT EOF	VT JIC	VT 211	Brattleboro EOC	Dummerston EOC
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0817	0825	0827	0822	0831	0831	0849
Site Area Emergency	1010	1024	1013	1014	1029	1027	1027
General Emergency	1143	1205	1150	1154	1201	1207	1206
Simulated Rad. Release Started	1027	1052	1028	1042	1029	1010	1056
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	1340	Ongoing	Ongoing
Facility Declared Operational		0842	0911	0930	0842	0935	0925
Declaration of Emergency: State		1010	1015	N/A	1054	1014	1015
Declaration of Emergency: Local		N/A	N/A	N/A	N/A	N/A	N/A
Early Precautionary Actions: Close Parks		0930	N/A	0947	1029	0936	0935
Early Precautionary Actions: School Transfer		0930	0945	0947	1029	0936	0935
Early Precautionary Actions: Shelter Livestock		0930	0935	0947	1029	0936	0935
1st Protective Action Decision:		1041	1035	1042	1029	1050	1048
1st Siren Activation		1053	1053	1052	N/A	1053	1048
1st EAS Message		1056	1056	1052	N/A	1056	1048
2nd Protective Action Decision:		1058	N/A	N/A	1201	1124	1105
2nd Siren Activation		1110	1110	1108	N/A	1136	1105
2nd EAS Message		1113	1113	1108	N/A	1139	1105
3rd Protective Action Decision:		1124	N/A	N/A	1216	1230	1134
3rd Siren Activation		1136	1140	1147	N/A	1232	1134
3rd EAS Message		1139	1140	1147	N/A	1235	1134
4th Protective Action Decision:		1224	N/A	N/A	N/A	N/A	1232
4th Siren Activation		1232	N/A	N/A	N/A	N/A	1232
4th EAS Message		1235	N/A	N/A	N/A	N/A	1235
KI Administration Decision: Emergency Workers		1155	1203	1201	N/A	1155	1200
KI Administration Decision: General Public		1155	1203	1201	1216	1155	1200

Table 1 - Exercise Timeline
DATE: 2011-05-03, SITE: Vermont Yankee Power Station, VT

Emergency Classification Level or Event	Time Utility Declared	Guilford EOC	Halifax EOC	Vernon EOC	NH SEOC	NH VY JIC	SWNHDFMA
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0817	0844	0831	0830	0823	0830	0817
Site Area Emergency	1010	1025	1025	1026	1020	1014	1026
General Emergency	1143	1205	1203	1206	1158	1154	1200
Simulated Rad. Release Started	1027	1055	1057	1057	1050	N/A	N/A
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	N/A
Facility Declared Operational		0900	0923	0900	0839	N/A	0916
Declaration of Emergency: State		1012	1011	1008	0934	1000	1113
Declaration of Emergency: Local		N/A	N/A	N/A	N/A	N/A	1056
Early Precautionary Actions: Close Parks		0945	N/A	0930	0917	0938	1056
Early Precautionary Actions: School Transfer		0945	0940	0930	1058	1105	1113
Early Precautionary Actions: Shelter Livestock		0945	0940	0930	1058	1146	1130
1st Protective Action Decision:		1044	N/A	1045	1041	N/A	1130
1st Siren Activation		1053	1053	1045	1053	N/A	1056
1st EAS Message		1056	1056	1045	1056	1046	1056
2nd Protective Action Decision:		1236	N/A	N/A	1058	N/A	1136
2nd Siren Activation		1110	1110	1104	1110	N/A	1136
2nd EAS Message		1113	1113	1104	1113	1105	1139
3rd Protective Action Decision:		N/A	N/A	N/A	1124	N/A	1255
3rd Siren Activation		1136	1136	1136	1136	N/A	1232
3rd EAS Message		1139	1139	1139	1139	1130	1235
4th Protective Action Decision:		N/A	N/A	1230	1224	N/A	
4th Siren Activation		1232	1232	1232	1232	N/A	
4th EAS Message		1235	1235	1235	1235	N/A	
KI Administration Decision: Emergency Workers		1158	1158	1158	N/A	N/A	
KI Administration Decision: General Public		1158	1158	N/A	N/A	N/A	1255

Table 1 - Exercise Timeline
DATE: 2011-05-03, SITE: Vermont Yankee Power Station, VT

Emergency Classification Level or Event	Time Utility Declared	NH VT EOF	NH Cheshire Cnty Dispatch	Chesterfield EOC	Hinsdale EOC	Richmond EOC	Swanzey EOC
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0817	0823	0832	0834	0830	0831	0835
Site Area Emergency	1010	1012	1027	1028	1023	1024	1026
General Emergency	1143	1145	1205	1205	1200	1202	1205
Simulated Rad. Release Started	1027	1042	N/A	1205	1108	1107	1108
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		1020	N/A	0915	0907	0906	0900
Declaration of Emergency: State		0958	N/A	1001	1000	0956	0955
Declaration of Emergency: Local		N/A	N/A	1030	N/A	N/A	N/A
Early Precautionary Actions: Close Parks		N/A	N/A	1020	0930	N/A	0930
Early Precautionary Actions: School Transfer		1043	N/A	N/A	1056	N/A	1106
Early Precautionary Actions: Shelter Livestock		1043	N/A	1109	1108	N/A	1106
1st Protective Action Decision:		1232	N/A	1150	N/A	N/A	N/A
1st Siren Activation		1050	1053	1053	1053	1053	1053
1st EAS Message		1050	1056	1056	1056	1056	1056
2nd Protective Action Decision:		N/A	N/A	1109	1105	N/A	N/A
2nd Siren Activation		1130	1110	1110	1110	1110	1110
2nd EAS Message		1130	1113	1113	1113	1113	1113
3rd Protective Action Decision:		N/A	N/A	1127	N/A	N/A	N/A
3rd Siren Activation		1126	1136	1136	1136	1136	1136
3rd EAS Message		1126	1139	1139	1139	1139	1139
4th Protective Action Decision:		N/A	N/A	1236	1231	N/A	N/A
4th Siren Activation		1222	N/A	1232	1232	1232	1232
4th EAS Message		1222	N/A	N/A	1235	1235	1235
KI Administration Decision: Emergency Workers		N/A	N/A	N/A	N/A	N/A	N/A
KI Administration Decision: General Public		N/A	N/A	N/A	N/A	N/A	N/A

Table 1 - Exercise Timeline
DATE: 2011-05-03, SITE: Vermont Yankee Power Station, VT

Emergency Classification Level or Event	Time Utility Declared	Winchester EOC	Keene EOC	MA SEOC	MA VY EOF	MA VY JIC	MA RIII/IV
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0817	0831	0831	0823	0825	0823	0823
Site Area Emergency	1010	1025	1026	1026	1013	1014	1022
General Emergency	1143	1156	1222	1158	1150	1157	1200
Simulated Rad. Release Started	1027	1107	1056	1041	1042	1048	1105
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		0910	0952	0905	0911	0930	0830
Declaration of Emergency: State		0957	0958	1025	1028	1027	1027
Declaration of Emergency: Local		N/A	N/A	N/A	N/A	N/A	1033
Early Precautionary Actions: Close Parks		0958	0958	1018	1027	1035	1022
Early Precautionary Actions: School Transfer		N/A	1010	1018	1027	1035	1022
Early Precautionary Actions: Shelter Livestock		1107	1109	1018	1027	1035	1058
1st Protective Action Decision:		N/A	N/A	1041	1059	1052	N/A
1st Siren Activation		1053	1053	1053	1053	1052	1053
1st EAS Message		1056	1056	1056	1056	1052	1056
2nd Protective Action Decision:		1107	N/A	1058	1111	1108	N/A
2nd Siren Activation		1107	1110	1110	1110	1108	1110
2nd EAS Message		1107	1113	1113	1113	1108	1113
3rd Protective Action Decision:		N/A	1137	1126	1139	1147	N/A
3rd Siren Activation		1136	1136	1136	1136	1147	1136
3rd EAS Message		1139	1139	1139	1139	1147	1139
4th Protective Action Decision:		1235	1230	1224	1228	1235	N/A
4th Siren Activation		1232	1232	1232	1232	1235	1232
4th EAS Message		1235	1235	1235	1235	1235	1235
KI Administration Decision: Emergency Workers		N/A	N/A	1224	1150	1235	1217
KI Administration Decision: General Public		N/A	N/A	N/A	N/A	N/A	N/A

Table 1 - Exercise Timeline
DATE: 2011-05-03, SITE: Vermont Yankee Power Station, VT

Emergency Classification Level or Event	Time Utility Declared	Bernardston EOC	Colrain EOC	Gill EOC	Greenfield EOC	Leyden EOC	Northfield EOC
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0817	0834	0836	0836	0835	0830	0839
Site Area Emergency	1010	1018	1025	1030	1025	1027	1023
General Emergency	1143	1204	1204	1209	1210	1208	1207
Simulated Rad. Release Started	1027	1101	1058	1109	1101	1101	1056
Simulated Rad. Release Terminated	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	Ongoing
Facility Declared Operational		0847	0904	0850	0850	0910	0910
Declaration of Emergency: State		1029	1030	1032	1023	1029	1030
Declaration of Emergency: Local		1032	0950	1000	0850	1023	0950
Early Precautionary Actions: Close Parks		1032	1029	1026	1018	1027	1034
Early Precautionary Actions: School Transfer		1032	1018	1026	1018	1026	1023
Early Precautionary Actions: Shelter Livestock		1032	1029	1026	1018	1027	1034
1st Protective Action Decision:		N/A	1045	1042	N/A	N/A	N/A
1st Siren Activation		1053	1053	1053	1053	1053	1044
1st EAS Message		1056	1056	1056	1056	1056	N/A
2nd Protective Action Decision:		1106	1102	1103	N/A	N/A	N/A
2nd Siren Activation		1110	1110	1110	1110	1110	1102
2nd EAS Message		1113	1113	1113	1113	1113	N/A
3rd Protective Action Decision:		1128	1129	1126	N/A	1128	N/A
3rd Siren Activation		1136	1136	1136	1136	1136	1126
3rd EAS Message		1139	1139	1134	1139	1139	N/A
4th Protective Action Decision:		1216	1227	1227	N/A	1219	N/A
4th Siren Activation		1232	1232	1232	1232	1232	N/A
4th EAS Message		1235	1235	1235	1235	1235	N/A
KI Administration Decision: Emergency Workers		1210	1215	1218	1215	1219	1220
KI Administration Decision: General Public		N/A	N/A	N/A	N/A	N/A	N/A

Table 1 - Exercise Timeline

DATE: 2011-05-03, SITE: Vermont Yankee Power Station, VT

Emergency Classification Level or Event	Time Utility Declared	Warwick EOC
Unusual Event	N/A	N/A
Alert	0817	0836
Site Area Emergency	1010	1024
General Emergency	1143	1205
Simulated Rad. Release Started	1027	1106
Simulated Rad. Release Terminated	Ongoing	Ongoing
Facility Declared Operational		0856
Declaration of Emergency: State		N/A
Declaration of Emergency: Local		1049
Early Precautionary Actions: Close Parks		1051
Early Precautionary Actions: School Transfer		1024
Early Precautionary Actions: Shelter Livestock		1024
1st Protective Action Decision:		N/A
1st Siren Activation		N/A
1st EAS Message		1056
2nd Protective Action Decision:		N/A
2nd Siren Activation		N/A
2nd EAS Message		1113
3rd Protective Action Decision:		N/A
3rd Siren Activation		N/A
3rd EAS Message		1139
4th Protective Action Decision:		N/A
4th Siren Activation		N/A
4th EAS Message		1235
KI Administration Decision: Emergency Workers		1219
KI Administration Decision: General Public		N/A

APPENDIX C: EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 2011-05-03, SITE: Vermont Yankee Power Station, VT

LOCATION	EVALUATOR	AGENCY
Vermont State Emergency Operations Center	*Don Carlton Bob Gantt Rob Noecker Reggie Rodgers Marty Vyenielo	FEMA - RI ICFI ICFI ICFI FEMA - R3
Vermont State Emergency Operations Center - Day 2	Don Carlton Bob Gantt *Reggie Rodgers	FEMA - RI ICFI ICFI
Vermont EOF	*Johanna Berkey Alan Bevan	FEMA R10 ICFI
Vermont Joint Information Center	*Bridget Ahlgrim Robert O'Sullivan	FEMA - HQ FEMA - RI
VT Plume Tracking Team-1	*Mike Howe	FEMA - HQ
VT Plume Tracking Team-2	*Marcy Campbell	ICFI
Vermont Rockingham State Police	*Terry Blackmon	ICFI
Vermont Alternate Warning Point	*Sam Nelson	ICFI
Vermont 211 Call Center	*Cheryl Weaver	ICF
VT (VY) Field Sampling Team Coordinator	*Joseph Keller	ICFI
VT (VY) Field Sampling Team-1	*Mike Howe	FEMA - HQ
VT (VY) Field Sampling Team-2	*Johanna Berkey	FEMA R10
VT (VY) Field Sampling Team-3	*Marcy Campbell	ICFI
VT State Laboratory	*Marty Vyenielo	FEMA - R3
NH State Emergency Operations Center	Jim Hickey Lou Sosler Robert Vork David White	ICFI ICFI ICFI ICFI
NH 911 Call Center	*Lou Sosler	ICFI
NH State Police Communications Center, NH State Warning Point		
NH (VY) Joint Information Center	*Paul J Nied	ICFI
NH State Police Troop C, Keene	Karl Fippinger *Dave Petta	ICFI ICFI
NH (VY) Field Monitoring Team-1	*Richard Grundstrom	ICFI
NH (VY) Field Monitoring Team-2	*Anthony Honnellio	EPA
NH State Warning Point	*Robert Vork	ICFI
NH (VY) Emergency Operations Facility	Joseph Keller *Michael Shuler, Sr	ICFI Department of Homeland Security
NH Cheshire County Sheriff's Dispatch	Kara Scott	FEMA R5
WKNE Radio Station	*Dave Petta	ICFI
Massachusetts State Emergency Operations Center	Kaori Flores Dave Seebart John Simpson	FEMA - HQ ICFI FEMA R5
MA 211 Call Center	*Danny Loomis	ICFI
MA Warning Point - Shelburne	Lou DeGilio	FEMA - HQ
MA (VY) Emergency Operations Facility	Jill Leatherman *Dave Stuenkel	ICFI ICFI
MA (VY) Joint Information Center	*Henry Christiansen	ICFI

MA (VY) Field Monitoring Team-1	*Gary Goldberg	ICFI
MA (VY) Field Monitoring Team-2	Paul Ward	FEMA - HQ
MA Region III/IV EOC	Kathleen Murphy Kevin Reed Bill Webb	FEMA - RI FEMA - R2 FEMA - R10
Brattleboro Local EOC	Bonnie Sheffield Betsy Snell *Robert Swartz	FEMA - HQ FEMA - RI FEMA - RI
Dummerston Local EOC	George Allen Terry Blackmon Helen LaForge *Robert Swartz	US FDA ICFI DHS, FEMA, Region I FEMA - RI
Guilford Local EOC	Don Carlton Ryan Jones David Kayen *Richard Kinard	FEMA - RI FEMA - RI ICFI FEMA - R3
Halifax Local EOC	John Arszulowicz Don Carlton *Janet Hlavaty-LaPosa Robert Pesapane	FEMA HQ FEMA - RI FEMA - R10 FEMA - RI
Vernon Local EOC	Brian Collins Brian Hasemann *Robert Swartz	FEMA - R1 FEMA R2 FEMA - RI
Chesterfield Local EOC	*Paul Anderson Clayton Spangenberg	FEMA - R9 ICFI
Hinsdale Local EOC	*Richard Echavarria Elena Joyner Alberto Sifuentes	FEMA - R9 FEMA - R9 FEMA - R IX
Richmond Local EOC	Michael Brazel Roy Smith	FEMA - RI ICFI
Swanzey Local EOC	*Todd Gemskie Patricia Mason	FEMA
Winchester Local EOC	Christopher Lynch *Bruce Swiren	FEMA - RI ICFI
MA State Police Troop B, Northampton	*Robert Swartz	FEMA - RI
MA State Police Troop B, Shelburne Falls	*Robert Swartz	FEMA - RI
Bernardston Local EOC	Carl Bebrich Timothy Looby Michelle Ralston *Robert Swartz	FEMA R5 FEMA - RI FEMA - HQ FEMA - RI
Colrain Local EOC	Gary Bolender Lou DeGilio *Robert Swartz	ICFI FEMA - HQ FEMA - RI
Gill Local EOC	Rick Collins Wanda Gaudet *Robert Swartz Kenneth Wierman	FEMA/REPP HQ FEMA - RI FEMA - RI FEMA - HQ
Greenfield Local EOC	Linda Gee *Taneeka Hollins Ann Mulvaney	FEMA R6 FEMA - RI FEMA RI
Leyden Local EOC	Rebecca Fontenot *Robert Swartz Meg Swearingen	FEMA - HQ FEMA - RI ICFI

Northfield Local EOC	Mark Dalton Patti Gardner *Robert Swartz	ICFI FEMA - HQ FEMA - RI
Warwick Local EOC	*Robert Swartz Miriam Weston Dennis Wilford	FEMA - RI FEMA - R2 ICFI
Gill/Montague School District	*Robert Swartz	FEMA - RI
Full Circle School	*Robert Swartz	FEMA - RI
Gill Elementary School	*Robert Swartz	FEMA - RI
Holten Nursing Home	*Robert Swartz	FEMA - RI
Dummerston Elementary School	*Robert Swartz	FEMA - RI
Fort Drummer State Park	*Robert Swartz	FEMA - RI
Green Mountain Camp	*Robert Swartz	FEMA - RI
Hidden Acres Camp Grounds	*Robert Swartz	FEMA - RI
Infant Toddler Center	*Robert Swartz	FEMA - RI
Jen's Child Care	*Robert Swartz	FEMA - RI
KOA Camp Grounds	*Robert Swartz	FEMA - RI
Marie Child Care	*Robert Swartz	FEMA - RI
Robins Family Child Care	*Robert Swartz	FEMA - RI
Frog Hollow Day Care	*Don Carlton	FEMA - RI
Pitter Patter Day Care	*Don Carlton	FEMA - RI
Pine Heights Nursing Home	*Don Carlton	FEMA - RI
Vernon Preschool	*Don Carlton	FEMA - RI
Southwestern New Hampshire District Fire Mutual Aid Local Warning Point	*Norma Costa	FEMA - RI
Keene Local EOC	*Laura Forrest	FEMA - R2
MA Dept. of Public Health (Northampton KI Dispensing Site)	*Don Carlton	FEMA - RI
Greenfield Community College	*Don Carlton	FEMA - RI
Montague Turner's Fall Middle High School	Robert Swartz	FEMA - RI
* Team Leader		

APPENDIX D: EXERCISE PLAN

2011 VERMONT YANKEE EXERCISE EOP
COMMONWEALTH OF MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS EVALUATION AREAS AND EXTENT OF PLAY VERMONT YANKEE NUCLEAR POWER STATION EXERCISE MAY 3, 2011

Overview

The following locations and organizations will demonstrate in 2011:

State Emergency Operations Center
Massachusetts Emergency Management Agency (MEMA)
Massachusetts Department of Public Health (MDPH)
Massachusetts State Police (MSP)
Massachusetts Department of Transportation (MassDOT)
Massachusetts National Guard
Massachusetts Department of Mental Health (MDMH)
American Red Cross of Massachusetts Bay (ARC)
Federal Emergency Management Agency Region I (FEMA)

Mass-211 Operations Center
Mass-211 (United Way of Massachusetts Bay)
Massachusetts Office of the Secretary of the Commonwealth

Region III/IV Emergency Operations Center
Massachusetts Emergency Management Agency
Massachusetts State Police Troop B
Massachusetts Department of Transportation (MassDOT) District 2
Department of Conservation & Recreation, District 9 Fire Warden (DCR)
Massachusetts Department of Fish and Game Office of Law Enforcement (MDFG - OLE)
American Red Cross of Pioneer Valley
Radio Amateur Civil Emergency Service Operators (RACES)

Vermont Yankee Emergency Operations Facility
Massachusetts Emergency Management Agency
Massachusetts Department of Public Health

Vermont Yankee Joint Information Center
Massachusetts Emergency Management Agency

Radiological Field Monitoring and Sampling Teams
Massachusetts Department of Public Health – Nuclear Incident Advisory Team (NIAT)

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Risk Jurisdictions
Bernardston EOC
Colrain EOC
Gill EOC
Greenfield EOC
Leyden EOC
Northfield EOC
Warwick EOC

Shelburne Control Dispatch Center

EAS Radio Station
WBZ 1030 AM

MS-1 Hospital
Franklin Medical Center – out of sequence

Massachusetts State Police
Troop B at Headquarters, Northampton, MA – out of sequence

Reception Center
Greenfield Community College – out of sequence

Radiological Monitoring & Decontamination Station
Greenfield Community College – out of sequence

Host Facility
Turners Falls High School – out of sequence

KI Dispensing Center
Northampton KI Dispensing Site – out of sequence

Gill-Montague Regional School District
Superintendent's Office – Initial call only for exercise
Superintendent's Office – out of sequence
Full Circle School – out of sequence
Gill Elementary School – out of sequence

Mohawk Trail Regional School District
Superintendent's Office – Initial call only

Pioneer Valley Regional School District
Superintendent's Office – Initial call only

Transportation Provider
First Student Transportation – out of sequence

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The following organizations/locations **will not** demonstrate in 2011:

Mohawk Trail Regional School District
Colrain Central School
Linden Hill School
Northfield/Mount Hermon School
Giving Tree Preschool

Pioneer Valley School District
Superintendent's Office
Bernardston Elementary School
Pearl Rhode Elementary School
Northfield Elementary School
Pioneer Valley Regional High School
Warwick Community School

Camps
Camp Lion
Northfield Bible Conference Inc.
Camp Keewanee

Transportation Provider
F. M. Kusimeskus, Inc.

MDPH Laboratory
Jamaica Plain

Massachusetts Department of Transportation
District 2, Deerfield Maintenance Division

Massachusetts Department of Conservation & Recreation
District 9 – Fire Warden HQ, Rte. 2, Erving, MA
Northfield State Forest, Western Section – Northfield
Northfield State Forest, Eastern Section (Warwick State Forest) – Warwick
Mt. Grace State Forest – Warwick
Leyden State Forest – Leyden
Erving State Forest – Erving

Per FEMA Region I Memorandum dated, August 4, 2010, "On the Spot" corrections as outlined in Recommendation Initiative 1.5 – Correct Issues Immediately is approved for the following criterion: 1.d.1, l.e.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 4.a.3, 4.b.1, 5.b.1, 6.a.1, and 6.b.1.

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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, including the Massachusetts Emergency Management Team staff (MA Department of Public Health, MassDOT, MA Department of Mental Health, MA State Police, MA National Guard, Office of the Secretary of the Commonwealth, American Red Cross and FEMA Liaison), and the MASS 211 Liaison will be prestaged in the SEOC. and upon notification, will report to the Operations Room, using a ten-minute per hour travel time. The MASS 211 Call Center will be activated for a nuclear power plan event at Vermont Yankee. The notification process will be completed and call down rosters will be shown to the FEMA Evaluator.

Region III/IV EOC: MEMA Region III/IV and emergency volunteer staff will be prestaged outside of the EOC, and upon notification, will report to the Operations Room using a ten-minute per hour travel time.

EOF: MEMA and MDPH emergency staff will be prestaged in the area of the EOF, and upon notification, will report to the EOF using a ten-minute per hour travel time.

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Joint Information Center: MEMA staff will be prestaged in the area of the JIC, and upon notification, will report to the JIC, using a ten-minute per hour travel time.

EPZ Local EOCs: LEOC emergency response staff will be prestaged outside the EOC. Once notified to report, they will use a compressed reporting time of 10 minutes/hour of normal travel.

NIAT Field Monitoring Team Personnel: NIAT Field Team emergency response staff will be prestaged, and upon notification will report to the assigned location.

KI Dispensing Site – will be conducted out-of-sequence**.** Mobilization of personnel will be demonstrated by verifying availability of staff and obtaining an estimate time of arrival; however, no personnel will be deployed.

Reception Center – will be conducted out-of-sequence**.** Mobilization of personnel will be demonstrated by verifying availability of staff and obtaining an estimate time of arrival; however, no personnel will be deployed.

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

There are no new or renovated EOCs.

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Sub-element 1.c - Direction and Control

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

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

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

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

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.

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

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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.

NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the MEMA Controller. After an "on the spot" re-training by the local or State, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that day. (performance only; equipment cannot be redemonstrated)

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.

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

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

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

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

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

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

Massachusetts Extent of Play

Participating facilities will demonstrate that equipment, maps, displays, dosimetry, KI and other supplies are adequate and sufficient to support the emergency response.

FEMA will provide copies of the Annual Letter of Certification to evaluators, as appropriate.

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

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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 an emergency worker 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

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

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

Intent

This sub-element is derives 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 the licensee provides release and meteorological data, 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.

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Massachusetts Extent of Play

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

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

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

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

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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 actually occur.

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

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

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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.

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

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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 sub-element will not be evaluated in this exercise.

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

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

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

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

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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

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

EVALUATION AREA 3: Protective Action Implementation

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

Intent

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

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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.

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State Police Troop B at Headquarters, Northampton: Dosimetry packets will be issued to two State Police traffic control personnel, who will demonstrate knowledge of emergency worker exposure control and the use of dosimetry through an interview with the FEMA Evaluator out of sequence.

EPZ EOCs: Dosimetry packets will be issued to a minimum of five individuals who will be working inside each EPZ EOC. Knowledge of emergency worker exposure control and the use of dosimetry will be demonstrated through an interview with the FEMA Evaluator.

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

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.

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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. There are no institutionalized persons in the EPZ.

A FEMA Evaluator will interview school staff, including the school nurse and/or teacher who administer KI, out of sequence.

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

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

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

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

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

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

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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

Bernardston EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Colrain EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Gill EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Greenfield EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

The capability to correctly operate a TTY will be demonstrated in Greenfield by sending and receiving a test message to/from a TTY at the SEOC in Framingham.

Leyden EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Northfield EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

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No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

Warwick EOC: EOC staff will simulate contacting persons on their special needs lists by logging the calls at the appropriate time. The list of special needs individuals will be shown to the FEMA Evaluator; however, the information is confidential and copies will NOT be provided.

No vehicles for alerting persons with special needs or providing transportation to the transportation dependent will be mobilized.

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

EPZ EOCs: Initial notification will be made to all public school Superintendent's Offices. All further calls to schools will be simulated.

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First Student Inc: In an out of sequence demonstration, one bus escort will give a dosimetry briefing to one bus driver. Following that, the bus escort will demonstrate their ability to drive the route from Gill Elementary School to host facility at Turners Falls High School.

Gill-Montague Regional School District: Will be interviewed regarding knowledge of their plan by a FEMA evaluator out of sequence.

Locations to be interviewed are:
Superintendent's Office
Full Circle School
Gill Elementary School

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.

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

Massachusetts Extent of Play

SEOC: Massachusetts State Police and Massachusetts Department of Transportation Liaisons will demonstrate coordination of traffic and access control, but no personnel or equipment will actually be deployed. The demonstration will include interstate coordination of traffic and access control, if appropriate.

Massachusetts State Police Troop B at Headquarters, Northampton: Two personnel who might be assigned traffic and access control duties will be interviewed by the FEMA evaluator out of sequence. on the procedures for operating an access control point. No deployment to TCP/ACP locations will occur.

Region III/IV EOC: The Massachusetts State Police Liaison will demonstrate coordination of traffic and access control through discussion and communication, but no personnel or equipment will be deployed to field locations.

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

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

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

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

Massachusetts Extent of Play

Each EPZ Local EOC will demonstrate decision making regarding rerouting of traffic following a traffic impediment. No personnel or equipment will be deployed to the accident scene.

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

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.

Massachusetts Extent of Play

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

> **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.

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

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

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

Massachusetts Extent of Play

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

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

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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 individual 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

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

EVALUATION AREA 4: Field Measurement And Analysis

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

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

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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

Two NIAT field teams, each consisting of two people, will be dispatched in accordance with the NIAT Handbook from the Greenfield Fire Department located on 512 Main Street, Greenfield, MA.

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

Charcoal filter cartridges will simulate use of Silver Zeolite filter media. Simulated cartridges will be prepared for transportation to the Lab for analysis.

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

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

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

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

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

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

Massachusetts Extent of Play

The Field Team Coordinator (FTC) located at the utility EOF manages the NIAT Field Teams. The FTC will brief and dispatch two teams to sampling locations in accordance with the NIAT Handbook, Section D.4.

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NIAT Field Team personnel will prepare sample media, survey forms, and chain of custody documents as if they were being shipped to the Massachusetts Environmental Radiation Laboratory (MERL) for analysis. Actual transport of samples to the MERL 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 OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.

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

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

Massachusetts Extent of Play

Coordination concerning transfer of samples to the Massachusetts Environmental Radiation Laboratory (MERL) will be simulated and discussed in an interview with the FEMA Evaluator.

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

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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.

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

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

Massachusetts Extent of Play

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

NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the MEMA Controller. After an "on the spot" re-training by the local or State, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that 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)**

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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 sub-element will not be evaluated in this exercise.

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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.

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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

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 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 will be simulated by SEOC staff.

All States will coordinate activities for the activation of the NOAA tone-alert radios throughout the EPZ. Activation of the NOAA tone-alert radios by the State of Vermont will be demonstrated using a test message.

The simulated activation of the Rapid Emergency Notification Telephone System (RENTS) for all 3 States by the State of New Hampshire will be demonstrated.

The MA SEOC will demonstrate the actions necessary to perform the siren activation for all 3 States up to the point of actually sounding the sirens. Siren sounding will be simulated.

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

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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

Will demonstrate route alerting per procedure. The demonstration will be conducted out of sequence.

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)

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Extent of Play

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

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

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

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

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

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

EAS messages and media releases) and media information kits should be available for dissemination to the media.

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

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

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.

State EOC: Simulation Cell personnel will make calls simulating members of the public to the Mass-211 Public Information Line. This process will commence after the initial siren activation. Information on rumor trends recognized at the Mass-211 Public Information Line will be forwarded to the Public Affairs Office at the SEOC.

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. Information on rumor trends recognized will be forwarded to the Public Affairs Office at the SEOC.

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.

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

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

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

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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

The Greenfield Community College Reception Center will be demonstrated out of sequence.

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

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.

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

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

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

Massachusetts Extent of Play

The Greenfield Community College Reception Center will be demonstrated out of sequence.

ARCA: 9 (to be rectified in May 2011 Graded Exercise)

ISSUE: 67-05-6.b.1-A-25 (Page 93, Greenfield RC)

CONDITION: Contaminated personnel traveling through the secondary monitoring room were potentially contaminating the floor. There was no provision for a masslinn mop for the staff in the secondary monitoring to use on the portion of the floor where the contaminated individuals walked.

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

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,

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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

Turners Falls High School Host Facility will be demonstrated through an interview by the FEMA Evaluator out of sequence.

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)

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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, and done while 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.

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Massachusetts Extent of Play

The Franklin Medical Center was demonstrated out-of-sequence.

New Hampshire Extent of Play
Vermont Yankee Graded Exercise 2011

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.a – Mobilization

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

INTENT

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

EXTENT OF PLAY

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

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

FEMAEXERCISE EVALUATION GUIDE:

New Hampshire Extent of Play:

Emergency facilities will be alerted in accordance with the NHRERP. Those facilities that are to participate in the exercise will mobilize accordingly. Rosters for key personnel relief shifts will be available in each participating facility. Those facilities that are not participating will acknowledge receipt of notification, but will take no further action. Controllers will simulate facilities not participating in the exercise. The Following facilities are expected to Mobilize and participate in this exercise: ***NH State EOC, EOF, JIC, Hinsdale EOC Winchester EOC Chesterfield EOC Richmond EOC, Swanzey EOC***

Keene EOC (Host Community) Field Monitoring Teams, Field Sampling Teams (during ip activity) , Troop C NHSP, NHDOT Dstrict 4.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.b – Facilities

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

INTENT

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

EXTENT OF PLAY

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

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

FEMA Exercise Evaluation Guide:

New Hampshire Extent of Play:

There are currently no New Facilities in the New Hampshire Portion of the Vermont Yankee Emergency Planning Zone.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.c - Direction and Control

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

INTENT

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

EXTENT OF PLAY

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

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

FEMA Exercise Evaluation Guide

New Hampshire Extent of Play:

Participating state and local facilities will demonstrate their ability to direct and control emergency operations in accordance with the NHRERP.

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

Sub-element 1.d – Communications Equipment

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

INTENT

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

EXTENT OF PLAY

OROs will demonstrate that a primary and at least one backup system are fully functional at the beginning of an exercise. If a communications system or systems are not functional, but exercise performance is not affected, no exercise issue will be assessed. Communications equipment and procedures for facilities and field units

should be used as needed for the transmission and receipt of exercise messages. All facilities and field teams should have the capability to access at least one communication system that is independent of the commercial telephone system. Responsible OROs should demonstrate the capability to manage the communication

systems and ensure that all message traffic is handled without delays that might disrupt the conduct of emergency operations. OROs should ensure that a coordinated communication link for fixed and mobile medical support facilities exist.

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

FEMA Exercise Evaluation Area:

New Hampshire of Play:

Pursuant to the NHRERP, facilities participating in this exercise will demonstrate their primary and back up communications systems. Other communications systems and capabilities may also be used

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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

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

INTENT

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

EXTENT OF PLAY

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

All instruments should be inspected, inventoried, and operationally checked before each use. Instruments should be calibrated in accordance with the manufacturer's recommendations. Unmodified CDV-700 series instruments and other instruments without a manufacturer's recommendation should be calibrated annually. Modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer. A label indicating such calibration should be on each instrument or calibrated frequency can be verified by other means. Additionally, instruments being used to measure activity should have a range of readings sticker

affixed to the side of the instrument. The above considerations should be included in 4.a.1 for field team equipment; 4.c.1 for radiological laboratory equipment (does not apply to analytical equipment; under 4.c.1; reception center and emergency worker facilities' equipment under 6.a.1; and ambulance and medical facilities' equipment under 6.d.1.

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

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

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire Extent of Play:

FEMA will provide copies of the Annual Letter of Certification to evaluators, as appropriate. Instrument data will be an attachment to the Annual Letter of Certification. Pursuant to the NHRERP, facilities participating in this exercise will demonstrate their equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies are adequate and sufficient to support the emergency response.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

Sub-element 2.a – Emergency Worker Exposure Control

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

INTENT

This sub-element is derived from NUREG-0654, which provides that an ORO have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place as specified in the ORO's plans and procedures to authorize emergency worker exposure limits to be exceeded for specific missions.

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

EXTENT OF PLAY

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

This Evaluation Area will be demonstrated in accordance with the NHRERP by appropriate facilities that participate in the exercise. Protective action decision-making occurs at the New Hampshire EOC. The state decision-making team coordinates their activity with Vermont and Massachusetts. Recommended protective actions are transmitted to each municipal EOC from the state EOC.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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

Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (NUREG-0654, I.8., 10., 11. and Supplement 3.)

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs have the capability to use all available data to independently project integrated dose and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation.

OROs base these choices on protective action guides (PAGs) from the ORO's plans and procedures, or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher than normal risk from evacuation.

EXTENT OF PLAY

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

When the licensee provides release and meteorological data, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated. Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

This Evaluation Area will be demonstrated in accordance with the NHRERP at the State EOC in the context of the exercise scenario. Appropriate accident assessment models will be selected and used.

The state decision-making team will evaluate the recommendations of the accident assessment team and develop appropriate protective action decisions. Municipal organizations will be notified and respond in accordance with their plans and procedures to implement the recommended protective actions. The New Hampshire decision-making team will discuss its decisions with the Vermont and Massachusetts decision-making teams and coordinate the joint public notification process.

Protective action recommendations will be made in accordance with the NHRERP.

In consideration of the exercise time- line compression, appropriate field monitoring and sampling data will be provided to state accident assessment personnel in sequence from exercise controllers, upon request. This data will be available for consideration by the assessors without regard to the status or location of field monitoring teams.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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

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

INTENT

This sub-element is derived from NUREG-0654, which indicates that OROs have the capability to use all available data to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation. Additionally, they can base these choices on protective action guides (PAGs) from the ORO's plans and procedures, FRC Reports Numbers 5 and 7 or EPA 400-R-92-001 and other criteria, such as plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g., other affected OROs), availability of appropriate in-place shelter, weather conditions, and situations that create higher-than-normal risk from evacuation.

EXTENT OF PLAY

OROs should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate

to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

This activity will be demonstrated by the decision-making accident assessment teams in the State EOC.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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

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

INTENT

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

population groups (e.g., hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility-impaired individuals, and transportation-dependent individuals). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

EXTENT OF PLAY

Usually, it is appropriate to implement evacuation in areas where doses are projected to exceed the lower end of the range of PAGs, except for situations where there is a high-risk environment or where high-risk groups (e.g., the immobile or infirm) are involved. In these cases, examples of factors that should be considered are weather conditions, shelter availability, 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.

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. Contact with public school systems/ districts must be actual.

In accordance with plans and/or procedures, OROs and/or officials of participating 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 (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).

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.

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY: 143

The ability and resources to implement protective actions for special populations will be demonstrated in accordance with the NHRERP at the state and municipal EOCs. Each municipal EOC will simulate calls to special needs populations per their special needs call lists and arrange for appropriate resources to meet the special needs. Controller messages will simulate requests for assistance from the general public beyond the special needs call list. The dispatch of resources and response to requests for assistance will be simulated. Calls will be made to each school to verify transportation resource requirements. Calls will be made to transportation providers to verify resource capabilities. Default values will be used in determining resource requirements. The dispatch of transportation resources to schools will be simulated.

School Administrative Units located within the Vermont Yankee EPZ are: SAU 38, Hinsdale and Winchester; SAU 29, Chesterfield.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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

Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG-0654, I.8., J.11)

INTENT

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

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

EXTENT OF PLAY

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

The ORO should use its procedures (for example, development of a sampling plan) to assess the radiological consequences of a release on the food and water supplies. The ORO assessment should include the evaluation of the radiological analyses of representative samples of water, food, and other ingestible substances of local interest from potentially impacted areas, the characterization of the releases from the

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

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

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

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

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

New Hampshire plans to Support the State of Vermont as a non-evaluated participant during the conduct of the Vermont Yankee ingestion pathway exercise during two consecutive days with supporting out- of- sequence events scheduled, as appropriate.

Sequence of Events:

Day one will begin with notification of a simulated accident at Vermont Yankee. The sequence of events will lead to the mobilization of state and municipal operation centers and support facilities and will demonstrate their ability to implement their plans and procedures. At the end of day one (termination of the plume phase), the state EOC, and EOF will reconvene, and in conjunction with the State of Vermont and representatives of requested federal support organizations (Federal support will be requested based on the activity/requests generated by exercise participants and their response to the simulated emergency scenario), will conduct an advanced party meeting with the Federal response organizations. The New Hampshire Accident Assessment Team will coordinate with Vermont using data and materials developed during the plume phase to develop a monitoring plan for the next day. Presentation of the monitoring plan and establishment of a FRMAC location will terminate day one activities.

On day two the accident assessment team, Department of Environmental Services, and the NH Department of Agriculture will meet the morning of day two in the EOC, and will be provided the results of the monitoring activities to include DOE flyover data. The accident assessment team will demonstrate their ability to independently assess this data and formulate an appropriate relocation recommendation and an appropriate sampling strategy. Once they have successfully demonstrated their ability to achieve an independent assessment, they will present their results to decision-makers, who will convene in the EOC later in the morning. Those in the EOC will then demonstrate the ability to coordinate and implement the recommendations provided by the accident assessment team. Coordination will occur among New Hampshire, Vermont and Massachusetts and the FRMAC.

A media advisory encapsulating the state actions and recommendations will be produced and Coordinated with the other states and federal response.

Once a successful independent demonstration of the ability to evaluate, assess, and develop an appropriate relocation assessment, the EOC assessment team will be free to share their recommendations with the FRMAC, Vermont, and Massachusetts. A break for lunch will occur at this point.

Immediately after lunch, the accident assessment team, Department of Environmental Services, and NH Department of Agriculture will reconvene and be provided with the laboratory results based on the sampling plan requested by them earlier.

The assessment team will then analyze this data independently and formulate a recommendation for the control of foodstuffs and will develop long term recovery/reentry recommendations (1, 2 and 50 years).

Once a successful independent demonstration of the ability to evaluate, assess and develop an appropriate foodstuff embargo / recovery/ reentry recommendation, the EOC assessment team will be free to share their recommendations with the FRMAC, Vermont and Massachusetts.

The EOC will demonstrate the ability to coordinate and implement the embargo/recovery/ reentry
Recommendations provided by the accident assessment team. Coordination will occur between New Hampshire, Vermont, Massachusetts and the FRMAC.

A media advisory encapsulating the state actions and recommendations will be produced and release will be coordinated with the other states and federal responders. This will end the exercise.

Precautionary actions during the plume phase of the emergency (i.e., sheltering milk-producing animals) will be recommended as appropriate. For ingestion pathway calculations, two calculations per sample type will be evaluated. There will be two sample types of appropriate volume per sampling procedure provided—milk and water. Using the

FRMAC fly-over maps of the plume footprint, the NH State Departments of Health, Agriculture and Environmental Services will develop a sampling strategy for milk, forage, and water. The Sampling teams will be briefed and dispatched to a designated sampling site.

The NH State Department of Health's Radio Chemistry Laboratory will follow its procedures for demonstrating the assessment of radioisotope levels in two samples each of milk and water. This will be done out of sequence. Data will be provided to the NH dose assessment team by the Controllers and will reasonably represent that which would be provided by the radio chemistry laboratory. The results will be compared to the USFDA Derived Intervention Levels (DIL) and EPA standards. The Controllers will then provide the State assessment team with additional data/maps showing the locations where the DIL are exceeded. The Departments of Health Services, Agriculture and Environmental Services will then provide the State EOC decision- maker with a protective action recommendation for the different food and water pathways.

EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING

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

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

INTENT

The sub-element is derived from NUREG-0654, which provides that OROs have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

EXTENT OF PLAY

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

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

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

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

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

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

Other factors that the ORO should consider are, for example: conditions that permit the cancellation of the emergency classification level and the relaxation of associated restrictive measures, basing return recommendations (i.e., permitting populations that were previously evacuated to reoccupy their homes and businesses on an unrestricted basis) on measurements of radiation from ground deposition; and the capability to identify services and facilities that require restoration within a few days and

to identify the procedures and resources for their restoration. Examples of these

services and facilities are: medical and social services, utilities, roads, schools, and intermediate term housing for relocated persons.

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

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

Using the FRMAC fly over maps of the plume footprint, the NH State Departments of Health, Agriculture and Environmental Services will develop a sampling strategy for milk, forage, and water. The NH State Department of Health's Radio Chemistry Laboratory will follow its procedures for demonstrating the assessment of radioisotope levels in one sample of surface water, milk soil and forage. This will be done out of sequence. Data for 2 soil samples will be provided to the NH dose assessment team by the Controllers and will reasonably represent that which would be provided by the radio chemistry laboratory. The results will be compared to the USFDA Derived Intervention Levels (DIL) and EPA standards. The Controllers will then provide the State assessment team with additional data / maps showing the locations where the DIL are exceeded. The Departments of Health Services, Agriculture and Environmental Services will then provide the State EOC decision maker with a protective action recommendation for the different food and water pathways.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; the reading of direct-reading dosimetry by emergency workers at appropriate frequencies; maintaining a radiation dose record for each emergency worker; and establishing a decision chain or authorization procedure for emergency workers to incur radiation

exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.

EXTENT OF PLAY

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

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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.

FEMA Exercise Evaluation Guide

New Hampshire Extent of Play:

The RADEF Officer in each facility will issue appropriate dosimetry in accordance with the NHRERP. The following facilities will demonstrate their ability to meet these criteria: LOCAL EOCs--Hinsdale, Winchester, Chesterfield, Richmond and Swanzey; Field Teams; Troop C; and Department of Transportation, Division 4.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

Sub-element 3.b – Implementation of KI Decision

Criterion 3.b.1: KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate recordkeeping of the administration of KI for emergency workers and institutionalized individuals is maintained. (NUREG-0654, E. 7. J. 10. e., f.)

INTENT

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

EXTENT OF PLAY

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

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

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

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

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

The capability to issue KI to emergency workers will be demonstrated at appropriate state and municipal facilities. The RADEF officer at each facility (including Troop C and Field Teams) will talk through the issuing process. No KI will be ingested. Quantities of KI are stored at each risk municipality EOC, EPZ nursing homes, hospitals, and the IFO. Calls to institutions will be simulated.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

Criterion 3.c.1: Protective action decisions are implemented for special populations other than schools within areas subject to protective actions. (NUREG-0654, E.7., J.9., 10.c.d.e.g.)

INTENT

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

EXTENT OF PLAY

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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**.**

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

EPZ EOCs will contact schools, licensed and registered childcare centers, nursing homes and hospitals according to their procedures. Students and patients/residents will not be involved. No vehicles will be dispatched for precautionary transfer or evacuation. The list of special needs persons will be shown to the FEMA Evaluator; however the information is confidential and copies will not be provided.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

INTENT

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

EXTENT OF PLAY

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 a school system or district within the EPZ, as appropriate, needs to demonstrate the implementation of protective actions. The implementation of canceling the school day, dismissing early, or sheltering should be simulated by describing to evaluators the procedures that would be followed. If evacuation is the implemented protective action, all activities to coordinate and complete the evacuation of students to reception centers,

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

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

The provisions of this criterion also apply to any private schools, private kindergartens and daycare 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 specified above or indicated in the extent-of-play agreement.

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

EPZ EOCs will contact schools, licensed and registered childcare centers, nursing homes and hospitals according to their procedures. Students and patients/residents will not be involved. No vehicles will be dispatched for precautionary transfer or evacuation

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION
Sub-element 3.d. – Implementation of Traffic and Access Control

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

INTENT

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

EXTENT OF PLAY

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

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

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

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

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

***Municipal police will be asked to describe their traffic control plan for their jurisdiction at the municipal EOC. Troop C New Hampshire State Police will describe the state access control plan at Troop C Headquarters in Keene. These demonstrations will occur during plume exposure pathway phase of the exercise at times to be coordinated between facility controllers and FEMA evaluators*.**

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION
Sub-element 3.d. – Implementation of Traffic and Access Control

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

INTENT

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

EXTENT OF PLAY

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

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

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

NH Department of Transportation and State Police personnel at Troop C Headquarters in Keene will discuss the resources to remove impediments as part of the traffic and access control briefing

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

INTENT

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

EXTENT OF PLAY

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

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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.

FEMA Exercise Evaluation Guide

New Hampshire EXTENT OF PLAY:

Activities will be demonstrated in accordance with the NHRERP. The State of NH will demonstrate the
implementation of food pathway decisions. There will be a discussion and the appropriate recommendations will be prepared to implement interdiction of foodstuffs. The establishment of transportation control will be discussed at the EOC. A media advisory will be prepared to advise the public of the State's actions. These activities will be demonstrated in coordination with Vermont.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION
Sub-element 3.e – Implementation of Ingestion Pathway Decisions

Criterion 3.e.2: Appropriate measures, strategies, and preprinted instructional material are developed for implementing protective action decisions for contaminated water, food products, milk, and agricultural production. (NUREG-0654, E.5., 7., J.9, 11.)

INTENT

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

EXTENT OF PLAY

Development of measures and strategies for implementation of 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 Ingestion Pathway Zone or the capability for rapid distribution of appropriate camera-ready information and instructions to pre-determined individuals and businesses. OROs should demonstrate the capability to control, restrict or prevent distribution of

contaminated food by commercial sectors. Exercise play should include demonstration of communications and coordination between organizations to implement protective actions.

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

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.

FEMA Exercise Evaluation Guide
New Hampshire EXTENT OF PLAY:
Instructional or informational messages on ingestion pathway protective measures will be developed for news briefings although broadcasts of messages will be simulated. Preprinted material such as agricultural booklets will be available for review. Communications with food producers and processors will be simulated

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

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

EXTENT OF PLAY

Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the (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 dosimeters for emergency workers; (2) questions regarding the individuals' objectives and locations expected to be visited and associated timeframes; (3) maps and plots of radiation exposure rates; (4) advice on areas to avoid; and (5) procedures for exit, including monitoring of individuals, vehicles, and equipment, decision criteria regarding contamination, proper disposition of emergency worker dosimeters, and maintenance of emergency worker radiation exposure records.

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

The State of NH will demonstrate the implementation of relocation, re-entry and return. There will be a discussion in the State EOC.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

Criterion 4.a.1: The field teams are equipped to perform field measurements of direct radiation exposure (cloud and ground shine) and to sample airborne radioiodine and particulates. (NUREG-0654, H.10, I.8., 9., 11.)

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to detect radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to large uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

For the purposes of this exercise, two NH DPHS radiological monitoring teams will be dispatched out of sequence. The teams will arrive at the DPHS radiological chemistry laboratory in Concord at 08:00 AM to obtain kits. The kits will be inventoried with each team at this time. Each team will source check their instruments and do a radio check, then deploy to the EPZ. FEMA evaluators for each team will observe the team's activities at the DPHS Laboratory, including the inventory process, and accompany the field teams to their assignments in the EPZ.. Charcoal cartridges will be used in place of silver-zeolite. The field data from the sample collection will be communicated to the DPHS Monitoring Team Coordinator (MTC sample transfer process will be talked through laboratory). The monitoring teams will collect two complete samples and will continue to collect samples until the exercise terminates. For the purposes of this exercise, two NH DPHS radiological monitoring teams will be dispatched out of sequence.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to significant uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

Responsible OROs should demonstrate the capability to brief teams on predicted plume location and direction, travel speed, and exposure control procedures before deployment.

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

DPHS Radiological Monitoring Teams are dispatched by the DPHS Radiological Chemistry Laboratory Supervisor located at the DPHS Radiological Chemistry Laboratory at 29 Hazen Drive in Concord. The DPHS Radiological Chemistry Laboratory Supervisor will assign vehicles and team numbers and radio call signs. He /she will provide an initial briefing and dispatch the teams to the EOF or a sampling location. DPHS Radiological Monitoring Teams receive assignments from the DPHS Monitoring Team Coordinator, DPHS MTC. The DPHS MTC may contact the DPHS Radiological Monitoring Teams while they are enroute to the EPZ or may wait until the team arrive in the EPZ to provide the teams with a pre-sampling briefing. The assignments may be communicated to the DPHS Monitoring Teams directly by the DPHS MTC or via the joint state /utility monitoring team dispatcher. The DPHS MTC makes team assignments at the direction of the DPHS Accident Assessment Team and the DPHS EOC RHTA stationed at the EOC in Concord. The NH DPHS Monitoring Team assignments are coordinated with the joint state /utility monitoring team dispatcher stationed in the EOF. The assignment and command of NH DPHS Monitoring Teams are the responsibility of the NH EOC RHTA and DPHS Accident Assessment Teams who work at the direction of the Director of DPHS. The monitoring team data will be collected at the direction of the DPHS MTC, and the data will be reported to the DPHS Accident Assessment Team via the DPHS MTC. Environmental sampling data will be provided the monitoring teams by the exercise controller. If it is necessary to collect monitoring team data out of sequence, controller data will be provided to the accident assessment team to facilitate the accident assessment process during the plume phase.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

Criterion 4.a.3: Ambient radiation measurements are made and recorded at appropriate locations, and radioiodine and particulate samples are collected. Teams will move to an appropriate low background location to determine whether any significant (as specified in the plan and/or procedures) amount of radioactivity has been collected on the sampling media. (NUREG-0654, I.8., 9., 11.)

INTENT

This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to deploy field teams with the equipment, methods, and expertise necessary to determine the location of airborne radiation and particulate deposition on the ground from an airborne plume. In addition, NUREG-0654 indicates that OROs should have the capability to use field teams within the plume emergency planning zone to measure airborne radioiodine in the presence of noble gases and to measure radioactive particulate material in the airborne plume.

In the event of an accident at a nuclear power plant, the possible release of radioactive material may pose a risk to the nearby population and environment. Although accident assessment methods are available to project the extent and magnitude of a release, these methods are subject to significant uncertainties. During an accident, it is important to collect field radiological data in order to help characterize any radiological release. Adequate equipment and procedures are essential to such field measurement efforts.

EXTENT OF PLAY

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

A minimum of two field teams will each pick up a minimum of two complete samples each consisting of an ambient radiation measurement and an air sample.

Charcoal filter cartridges may simulate use of silver zeolite filter media. Simulated cartridges will be prepared for transportation to the Lab for analysis.

Field data may be provided by Controllers to the Accident Assessment (Plume Tracking) Team to facilitate the accident assessment process during the exercise.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

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

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

INTENT

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

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

EXTENT OF PLAY

The ORO field teams should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

Two sampling teams will be demonstrated. NH Sampling Teams will pick up equipment and vehicles at the DPHS Radiological Chemistry Laboratory. The sampling teams will be dispatched to predetermined location by NH DPHS Radiological Chemistry Laboratory Supervisor. The sampling location will provide the appropriate sample matrixes. Some change in the targeted sample matrix may be necessary due to climate. (Hemlock brose may have to be taken if grazing grasses are not present or if the fields are still snow-covered.)

One sample each of the following will be collected: MILK, SURFACE WATER, FORAGE, and SOIL.

EVALUATION AREA 4: FIELD MEASUREMENT AND ANALYSIS

Sub-element 4.c - Laboratory Operations

Criterion 4.c.1: The laboratory is capable of performing required radiological analyses to support protective action decisions. (NUREG-0654, C.3., I.8., 9., J.11)

INTENT

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

EXTENT OF PLAY

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

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory's 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 those which are the 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, 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.

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

To facilitate the scenario, a package of prepared samples that would represent a simulation of samples collected later in the day and expected to be delivered to the DPHS Radiological Chemistry Laboratory by the NH Field Sampling Teams may be used to demonstrate sample receipt. Sample receipt and laboratory demonstrations will take place after the sampling teams are dispatched. Through a process of discussion and demonstration, the Lab will demonstrate initial receipt, chain-of-custody determination, and sample preparation for analysis, on one of the samples. A discussion of how other sample types will be prepared for analysis and counted will be provided. The Lab will provide, through discussion, the method of calibration of counting instruments, the library of isotopes and detection sensitivity. The Lab will discuss their internal quality control process. The actual counting of samples will not be demonstrated, as this would take too long. There will be no spiking of samples with radioisotopes.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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

Criterion 5.a.1: activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E & NUREG-0654, E. 1., 4., 5., 6., 7.)

INTENT

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

EXTENT OF PLAY

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

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

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

Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test messages 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.

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

Actions to demonstrate performance of the notifications of the public will be performed up to the point of actual transmission of the EAS message. In the initial notification the National Weather Service will be contacted by Vermont Emergency Management and a "Test" message will be transmitted The three states (VT, NH, & MA) will coordinate public notification.

The simulated activation of the sirens for all three (3) States by the Commonwealth of Massachusetts will be demonstrated.

All States will coordinate activities for the activation of the NOAA tone-alert radios throughout the EPZ. Activation of the NOAA tone-alert radios by the State of Vermont will be demonstrated using a test message.

The simulated activation of the Code Red notification system for all 3 States by SWNHFMA in Keene New Hampshire will be demonstrated.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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

Criterion 5.a.2: RESERVED

INTENT

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

N/A

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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

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

INTENT

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

EXTENT OF PLAY

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

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

A selected backup route-alerting demonstration will occur out of sequence at the end of the plume exercise. One route will be demonstrated by each municipality. This route will be different than the route demonstrated in the last exercise if multiple routes exist for a municipality.

EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION

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

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

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INTENT

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

EXTENT OF PLAY

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

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

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

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

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

The primary responsibility for briefing the media with respect to offsite activities in New Hampshire lies
with the State. The State EOC and the Media Center are the facilities where this process takes place. The
Media Center is the facility that is jointly operated among the states, the utility and federal response agencies. Controllers at these facilities will simulate media inquiries.

New Hampshire will coordinate its media information with Vermont, Massachusetts and Vermont Yankee personnel at the Joint Information Center (JIC).

New Hampshire EPZ municipalities do not have representatives at the JIC. EPZ municipal officials may respond to questions about local emergency response but are encouraged to refer press inquiries to the JIC. A controller message will be generated for each community to initiate a response and referral to media inquiries made to local officials.

A Public Inquiry line is established to provide members of the public with a supplemental source of emergency information. A control cell will provide incoming calls. Calls to the public inquiry center will occur when a Site Area Emergency and/or General Emergency emergency classification level (ECL) is reached during the course of the exercise. Public Inquiry personnel will provide callers with information and screen calls for trends. Municipalities will refer calls that address issues beyond the local jurisdiction to the Public Inquiry Center. A controller message will be generated for each Municipal EOC to initiate a response and referral to the Public Inquiry Center.

During an Actual Emergency WKNE repeats New Hampshire Emergency Public Information Messages every fifteen minutes until they are changed by the state. The repetition or broadcast of any exercise messages will be simulated for the purposes of this exercise.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

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

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

INTENT

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

EXTENT OF PLAY

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

Staff responsible for the radiological monitoring of evacuees should demonstrate the capability to attain and sustain a monitoring productivity rate per hour needed to monitor the 20% emergency planning zone (EPZ) population planning base within approximately 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 noted above or otherwise indicated in the extent-of-play agreement.

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FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

The Keene High School Reception Center was evaluated during the 2009 exercise sequence and will not be evaluated in this exercise sequence.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

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

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

INTENT

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

EXTENT OF PLAY

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

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

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

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

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

The Keene High School Emergency Worker Decontamination Center was evaluated during the 2009 exercise and will not be evaluated during this exercise sequence.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

Sub-element 6.c - Temporary Care of Evacuees

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

INTENT

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

EXTENT OF PLAY

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

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

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

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

FEMA Evaluation Guide:

New Hampshire EXTENT OF PLAY:

Congregate-care centers will not be activated. Current shelter surveys will be provided to FEMA for review. Based on FEMA's survey review, a tour of selected (some, all, or none) congregate-care facilities that support the Keene reception centers will be conducted with a controller and an ESF 6 or American Red Cross representative independently and out of sequence.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

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

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

INTENT

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

EXTENT OF PLAY

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

OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. However, to avoid taking an ambulance out of service, any vehicle

(e.g., car, truck, or van) may be utilized to transport a simulated victim to the medical facility. Normal communications between the ambulance/ dispatcher and the receiving medical facility should be demonstrated. If a substitute vehicle is used for transport to the medical facility, this communication must occur prior to releasing the ambulance from the drill. This 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 simulated victim may be performed before transport, done en route, or deferred to the medical facility. Before using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.

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

The medical facility should demonstrate the capability to 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.

FEMA Exercise Evaluation Guide:

New Hampshire EXTENT OF PLAY:

This Evaluation Area will be demonstrated out of sequence during the 2011 MS-1 Drill to be scheduled at Cheshire Medical Center in Keene

2011VYNPS Extent of Play/Objectives & Scope – FINAL Rev. 4 - 1 -

VERMONT YANKEE NUCLEAR POWER STATION
EMERGENCY PREPAREDNESS EXERCISE 2011

EXTENT OF PLAY (EOP) FOR THE STATE OF VERMONT

BACKGROUND: This is the 2011 Extent Of Play (EOP) Plume Phase criteria and Ingestion Pathway criteria.
This is a VERMONT ONLY document. The extents of play for New Hampshire and Massachusetts will be combined with this document into a combined document by FEMA. Ingestion Pathway, also called Post Plume, criteria or criteria only evaluated once every six years are identified with a # symbol as the example below indicates.

EXAMPLE: # Sub-element 2.d—Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway (applies to all criteria in this sub-element)

TARGET CAPABILITIES: The Target Capabilities List can be used to guide preparedness planning, establish training requirements, and evaluate performance through exercises and operations. In keeping with the capabilities-based planning described in the National Preparedness Goal, the following Capabilities were selected for the Vermont Yankee workshop and exercise series to be conducted in preparation for and during evaluated exercise in May 2011:
• Citizen Evacuation & Shelter-in-Place
• Communications
• Critical Resource Logistics & Distribution
• Emergency Operations Center Management
• Emergency Public Information & Warning
• Emergency Public Safety & Security Response
• Food & Agriculture Safety & Defense
• Mass Prophylaxis
• Planning
• Public Health Laboratory Testing
• Responder Health & Safety
• WMD & Hazardous Materials Response and Decontamination

2011VYNPS Extent of Play/Objectives & Scope – FINAL Rev. 4 - 2 -

STATE EVALUATION AREAS AND EXTENT OF PLAY FOR THE VERMONT YANKEE NUCLEAR POWER STATION EXERCISE
May 3 & 4, 2011

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

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 (OROs) should have the capability to alert, notify, and mobilize emergency personnel and to activate and staff emergency facilities.

Objective/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.

Sub-element 1.a.1 - Mobilization

Vermont Extent of Play

Rosters for 2nd shift personnel will be available for all facilities/locations staffed on a 24 hour basis. Real time notification of emergency response staff will be demonstrated during this exercise with the following exceptions:

The Nuclear Engineer will be in Brattleboro or Vernon in the normal course of his duties and will deploy to the EOF when he is paged out.

The Co-Director(s) of the Reception Center at the Bellows Falls Union High School will not participate beyond acknowledging the initial notification(s).

If there are any responders to other facilities that would have more than a 1 hour or more drive, they will go to a designated mobilization staging area and await the notification before deploying. The rule for arrival at a facility sooner than actual travel time is ten minutes for each hour of actual travel time. e.g. A responder living 1 hour away could arrive ten minutes after being notified.

Sub-element 1.b —Facilities

Intent

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

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

Extent of Play

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

Sub-element 1.b.1 - Facilities
Vermont Extent of Play
The following facilities are new or have an expanded role and will be evaluated under this criterion:

The State Emergency Operations Center (SEOC) is in a temporary location and that it may not meet all the criterion of 1.b.1, but when the renovation of the old SEOC is complete a FEMA evaluation will be requested.

Sub-element 1.c—Direction and Control
Intent
This sub-element is derived from NUREG-0654, which provides that OROs have the capability to control their overall response to an emergency.
Objective/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, 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 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.

Vermont Extent of Play
State EOC- Communications with the Governor and his staff will be simulated where necessary.
EPZ Town EOCs- If any towns are directed to evacuate, EOC personnel will simulate closing and transfer of their operation to their alternate EOC location and demonstrate continuity of government through a discussion. All appropriate communications with the State EOC will continue to be demonstrated at the town EOC. Communications with the Staging Area will be simulated.

ARCA:
ISSUE: 67-05-1.c.1-A-02 (Scheduled for 2011 Ingestion Pathway Exercise)
CONDITION: During the Ingestion Phase portion of the exercise on Day 3, The Incident Field Office only had the Exclusion Map. They were unaware of other maps

showing the food control zones as established for restricting access into the Exclusion Zone (restricted area). It was the IFO's understanding that the Exclusion Zone was the same area as the food control and that access control for the exclusion area was also the food control zone

Sub-element 1.d—Communications Equipment
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should establish reliable primary and backup communication systems to ensure communications with key emergency personnel at locations such as the following: appropriate contiguous governments within the emergency planning zone (EPZ), Federal emergency response organizations, the licensee and its facilities, emergency operations centers (EOC), and field teams.
Objective/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 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.

Vermont Extent of Play
All facilities (State EOC, SWPs, Town EOCs, and EOF) will demonstrate that a primary and at least one backup system are fully functional. For all above facilities, contact with locations or organizations that are not participating in the exercise or are demonstrating out of sequence will be simulated by placing an entry in the log at the appropriate time(s) in the exercise unless otherwise noted. The following chart represents the primary and secondary communications between the State EOC and the listed facility:

FACILITY	PRIMARY	BACK UP

FACILITY	PRIMARY	BACK UP
Dummerston EOC	EPZ Radio 45.52. MHz	Commercial Phone, RACES Radio, Disaster LAN, FAX
Guilford EOC	EPZ Radio 45.52. MHz	, Commercial Phone, RACES Radio, Disaster LAN, FAX
Halifax EOC	EPZ Radio 45.52. MHz	, Commercial Phone, RACES Radio, Disaster LAN, FAX
Vernon EOC	EPZ Radio 45.52. MHz	, Commercial Phone, RACES Radio, Disaster LAN, FAX
Reception Center at BFUHS	EPZ Radio 45.52. MHz	, Commercial Phone, RACES Radio FAX
Public Inquiry, 211*	Commercial Phone	FAX, Disaster LAN
Rockingham SWP	Commercial Phone	FAX, Disaster LAN
Derby ASWP	Commercial Phone	FAX, Disaster LAN
Staging Area	EPZ Radio 45.52. MHz	Commercial Phone RACES Radio, FAX, Disaster LAN, NAS phone
Joint Information Center	Commercial Phone	FAX, Disaster LAN
Emergency Operations Facility (VT)	EPZ Radio 45.52. MHz & FAX, & FMT Freq.	Commercial Phone, RACES Radio & Disaster LAN
Brattleboro EOC	EPZ Radio 45.52. MHz	Commercial Phone, RACES Radio, Disaster LAN, FAX

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

Intent

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

Objective/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 (ies) should be sufficient and consistent with the role assigned to that facility in the ORO's plans and/or procedures in support of emergency operations. Use of maps and displays is encouraged. All instruments, including air sampling flow meters (field teams only), should be inspected, inventoried, and

operationally checked before each use. They should be calibrated in accordance with the manufacturer's recommendations (or at least annually for the unmodified CDV-700 series or if there are no manufacturer's recommendations for a specific instrument; modified CDV-700 instruments should be calibrated in accordance with the recommendation of the modification manufacturer.). A label indicating such calibration should be on each instrument or verifiable by other means. Note: Field team equipment is evaluated under 4.a.1; radiological laboratory equipment under 4.c.1; reception center and emergency worker facilities' equipment is evaluated under 6.a.1; and ambulance and medical facilities' equipment is evaluated under 6.d.1.
Sufficient quantities of appropriate direct reading and permanent record dosimetry and dosimetry chargers should be available for issuance to all categories of emergency workers that could be deployed from that facility. Appropriate direct-reading dosimeter(s) should allow individual(s) to read the administrative reporting limits and maximum exposure limits contained in the ORO's plans and procedures.
Dosimeters should be inspected for electrical leakage at least annually and replaced, if necessary. CDV-138s, due to their documented history of electrical leakage problems, should be inspected for electrical leakage at least quarterly and replaced if necessary. This leakage testing will be verified during the exercise, through documentation submitted in the Annual Letter of Certification, or through a staff assistance visit.
Responsible OROs should demonstrate the capability to maintain inventories of KI sufficient for use by emergency workers, as indicated on rosters; institutionalized individuals, as indicated in capacity lists for facilities; and, where stipulated by the plan and/or procedures, members of the general public (including transients) *within the plume pathway EPZ.*
Quantities of dosimetry and available KI and storage locations(s) will be confirmed by physical inspection at storage location(s) or through documentation of current inventory submitted during the exercise or provided in the Annual Letter of Certification submission. 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 indicating that the KI supply remains potent, in accordance with Food and Drug Administration (FDA) guidance.
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 otherwise indicated in the extent of play agreement.

Sub-element 1.e.1- Equipment and Supplies to Support Operations
Vermont Extent of Play
FEMA will provide copies of the Annual Letter of Certification to evaluators, as appropriate. Instrument data will be an attachment to the Annual Letter of Certification. Pursuant to the VTRERP, facilities participating in this exercise will demonstrate the equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies available to them. Some procedures state that if kit boxes are sealed and have an inventory form attached, the teams do not need to perform an inventory prior to deployment. Instrument

calibration certificates are on file at both Vermont Emergency Management Offices and can be viewed by FEMA evaluators.
NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant. After an "on the spot" re-training by the State, 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 an offsite response organization (ORO) have the capability to assess and control the radiation exposure received by emergency workers and have a decision chain in place as specified in the ORO's plans and procedures to authorize emergency worker exposure limits to be exceeded for specific missions.
Radiation exposure limits for emergency workers are the recommended accumulated dose limits or exposure rates that emergency workers may be permitted to incur during an emergency. These limits include any pre-established administrative reporting limits (that take into consideration Total Effective Dose Equivalent or organ-specific limits) identified in the ORO's plans and procedures.

Objective/Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure 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 otherwise indicated in the extent of play agreement.2011VYNPS Extent of Play/Objectives & Scope – FINAL Rev. 4 - 9 -

Sub-element 2.a.1– Emergency Worker Exposure Control
Vermont Extent of Play
There will be no exceptions to this sub-element in the Vermont extent of play.

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 indicates that OROs have the capability to independently project integrated dose from exposure rates or other information and compare the estimated dose savings with the protective action guides. OROs have the capability to choose, among a range of protective actions, those most appropriate in a given emergency situation and base these choices on protective action guides (PAGs) from the ORO's plans and procedures or EPA 400-R-92-001 and other criteria, such as, plant conditions, licensee protective action recommendations, coordination of protective action decisions with other political jurisdictions (e.g. other affected OROs), availability of appropriate in-place shelter, weather conditions, evacuation time estimates, and situations that create higher than normal risk from evacuation.

Objective/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 on-site and off-site environmental conditions. (NUREG-0654, I.8, 10, & Supplement 3)

Extent of Play

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

When release and meteorological data are provided by the licensee, the ORO also considers these data. The ORO should demonstrate a reliable capability to independently validate dose projections. The types of calculations to be demonstrated depend on the data available and the need for assessments to support the PARs appropriate to the scenario. In all cases, calculation of projected dose should be demonstrated.

Projected doses should be related to quantities and units of the PAGs to which they will be compared. PARs should be promptly transmitted to decision-makers in a prearranged format.

Differences greater than a factor of 10 between projected doses by the licensee and the ORO should be discussed with the licensee with respect to the input data and assumptions used, the use of different models, or other possible reasons. Resolution of these differences should be incorporated into the PAR if timely and appropriate. The ORO should demonstrate the capability to use any additional data to refine projected doses and exposure rates and revise the associated PARs.

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

Sub-element 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 on-site and off-site environmental conditions

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

Objective/Criterion 2.b.2: A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9, 10.f, m)
Extent of Play
OROs should have the capability to make both initial and subsequent PADs. They should demonstrate the capability to make initial PADs in a timely manner appropriate to the situation, based on notification from the licensee, assessment of plant status and releases, and PARs from the utility and ORO staff.
The dose assessment personnel may provide additional PARs based on the subsequent dose projections, field data, or information on plant conditions. The decision-makers should demonstrate the capability to change protective actions as appropriate bases 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 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.

Sub-element 2.b.2- A decision-making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PADs) for the general public (including the recommendation for the use of KI, if ORO policy)
Vermont Extent of Play
There will be no exceptions to this sub-element in the Vermont extent of play.

Sub-element 2.c—Protective Action Decisions Considerations or Protection of Special Populations
Intent

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

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

Extent of Play

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

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

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

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

Sub-element 2.c.1- Protective action decisions are made, as appropriate, for special population groups

Vermont Extent of Play

There will be no exceptions to this sub-element in the Vermont extent of play.

Sub-element 2.d—Radiological Assessment and Decision-Making for the Ingestion Exposure Pathway (applies to all criteria of this sub-element)

Intent

This sub-element is derived from NUREG-0654, which provides that OROs have the means to assess the radiological consequences for the ingestion exposure pathway, relate

them to the appropriate protective action guides (PAG), 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.

Objective/Criterion 2.d.1: Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria. (NUREG-0654, J.9,11)
Plume Pathway Extent of Play
It is expected that the ORO(s) 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 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 for implementation decisions. As time permits, the ORO may also include a comparison of taking or not taking a given action on the resultant ingestion pathway dose commitments.
The ORO should demonstrate timely decisions to minimize radiological impacts from the ingestion pathway, based on the given assessments and other information available. Any such decisions should be communicated and to the extent practical, coordinated with neighboring and local OROs.
OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating.
All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.
Ingestion Pathway Extent of Play
This is primarily a State of Vermont criterion for decision making, sampling and analyzing results.

Sub-element 2.d.1 - Radiological consequences for the ingestion pathway are assessed and appropriate protective action decisions are made based on the ORO planning criteria

Vermont Extent of Play

Precautionary actions during the plume phase of the emergency (i.e., sheltering milk producing animals) will be recommended as appropriate.

For ingestion pathway calculations, three calculations per sample type will be evaluated. There will be four sample types of appropriate volume per sampling procedure provided: Soil, milk, forage and water.

On May 3 and 4 2011, using the FRMAC fly over maps of the plume footprint, the VT State Departments of Health, Agency of Agriculture, Food and Markets and the Agency of Natural Resources will develop a sampling strategy for milk, forage, and water. The Sampling teams will be briefed and dispatched to a predetermined location.

On May 4, 2011, the VT State Department of Health (VDH) will follow its procedures for demonstrating the dose assessment of radioisotope levels in three samples each of soil, forage, milk and water. The data provided to the State VDH dose assessment team by the Controllers will reasonably represent that which would be provided by the Health Department laboratory. Results will be compared to FDA DILs or other appropriate values.

The Controllers will then provide the State VDH with additional data / maps showing the locations where the DIL is exceeded. The VDH, Agency of Agriculture, Food and Markets, and Agency of Natural Resources will then provide the State EOC decision makers with a protective action recommendation for the different food pathways.

Sub-element 2.e—Radiological Assessment and Decision-Making Concerning Relocation, Re-entry, and Return (applies to all criteria of this sub-element)

Intent

The sub-element is derived from NUREG-0654, which provides that OROs have the capability to make decisions on relocation, re-entry, and return of the general public. These decisions are essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

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

Plume Pathway Extent of Play

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

Determination of areas to be restricted should be based on factors such as the mix of radionuclides in deposited materials, calculated exposure rates vs. the PAGs, and field samples of vegetation and soil analyses.
Re-entry: Decisions should be made regarding the location of control points and policies regarding access and exposure control for emergency workers and members of the general public who need to temporarily enter the evacuated area to perform specific tasks or missions.
Examples of control procedures are: the assignment of, or checking for, direct-reading and non-direct-reading 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.
Ingestion Pathway Extent of Play
This is a State of Vermont only criterion.

Sub-element 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

Vermont Extent of Play
All activities will be demonstrated in accordance with plans and procedures.*2011VYNPS Extent of Play/Objectives & Scope – FINAL* Rev. 4 - 15 -
For relocation calculations, two calculations of soil will be evaluated.
On May 3 and 4, 2011, using the FRMAC fly over maps of the plume footprint, the Vermont State Department of Health and Vermont Emergency Management will develop a sampling strategy for surface soil and area dose rates. The Sampling teams will be briefed and dispatched to a predetermined location in the Brattleboro area.
On May 3 and 4, 2011, the Vermont State Department of Health (VDH) will follow its procedures for demonstrating the dose assessment of radioisotope levels in three samples of soil. The data provided to the State VDH dose assessment team by the Controllers will reasonably represent that which would be provided by the Health Department laboratory. The Controllers will then provide the State VDH additional data/maps showing the locations where the DRLs are exceeded. This can be the FRMAC fly over data. The VDH, Agency of Agriculture, Food and Markets, and Agency of Natural Resources will then provide the State EOC decision makers with a protective action recommendation for the Restricted Zone. The State EOC will address the issues of Re-entry into the Restricted Area and the return of the public into non-restricted areas.

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 offsite emergency response organizations (ORO) should have the capability to provide for the following: distribution, use, collection, and processing of direct-reading dosimeters and permanent record dosimeters; provide for direct-reading dosimeters to be read at appropriate frequencies by emergency workers; maintain a radiation dose record for each emergency worker; and provide for establishing a decision chain or authorization procedure for emergency workers to incur radiation exposures in excess of protective action guides, always applying the ALARA (As Low As is Reasonably Achievable) principle as appropriate.
Objective/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 and permanent record dosimetry, dosimetry chargers, and instructions on the use of dosimetry to emergency workers. For evaluation purposes, appropriate direct-reading dosimetry is defined as dosimetry that allows individual(s) to read the administrative reporting limits (that are pre-established at a level low enough to consider subsequent calculation of Total Effective Dose Equivalent) and maximum exposure limits (for those emergency workers involved in life saving activities) contained in the OROs plans and procedures.

Each emergency worker should have the basic knowledge of radiation exposure limits as specified in the ORO's plan and/or procedures. Procedures to monitor and record dosimeter readings and to manage radiological exposure control should be demonstrated.2011VYNPS Extent of Play/Objectives & Scope – FINAL Rev. 4 - 16 -
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 exposures 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 mission.
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.

Sub-element 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
Vermont Extent of Play
Each of the following facilities will provide up to 2 emergency workers at random to discuss the turn back values according to their procedures with the FEMA evaluator.
Brattleboro EOC
Dummerston EOC
Guilford EOC
Halifax EOC
Vernon EOC
EOF

JIC
Staff at the above facilities will demonstrate actions described in their plans to determine whether to replace an exposed worker or get authorization for the worker to incur additional exposure. In addition, turn-in of dosimetry will be demonstrated.

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

Sub-element 3.b—Implementation of KI Decision
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to provide radioprotective drugs for emergency workers, institutionalized individuals, and, if in the plan and/or procedures, to the general public for whom immediate evacuation may not be feasible, very difficult, or significantly delayed. While it is necessary for OROs to have the capability to provide KI to emergency workers and institutionalized individuals, the provision of KI to the general public is an ORO option, reflected in ORO's plans and procedures. Provisions should include the availability of adequate quantities, storage, and means of the distribution of radioprotective drugs.

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

Sub-element 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

Vermont Extent of Play
Actual distribution and ingestion of KI will not occur. Radiological Officers and Dosimeter Coordinators will show the FEMA evaluator the supply of pills and explain that they would place the foil wrapped pill in each Emergency Worker packet. KI is pre-distributed to the members of the general public residing or working in the EPZ communities. Plume Tracking Teams and Post Plume Radiological sampling Teams have KI in their kits but will not open or ingest it.

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

Sub-element 3.c—Implementation of Protective Actions for Special Populations
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective action decisions, including evacuation and/or sheltering, for all special population groups (hospitals, nursing homes, correctional facilities, schools, licensed day care centers, mobility impaired individuals, transportation dependent, etc). Focus is on those special population groups that are (or potentially will be) affected by a radiological release from a nuclear power plant.

Objective/Criterion 3.c.1: Protective action decisions are implemented for special population groups 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 decisions 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.

Sub-element 3.c.1 - Protective action decisions are implemented for special population groups within areas subject to protective actions
Vermont Extent of Play
EPZ Town EOCs will discuss their special needs list with the FEMA evaluators. Contact with special needs individuals will be simulated by making an entry in the appropriate log. Where possible, special facilities will be interviewed by FEMA in a site visit prior to the May 2011 exercise. Those facilities such as state parks and summer camps that are not open in May will be interviewed in the Summer (TBD) in a site visit when they are open. The contact with the camps and parks will be simulated by making an entry in the appropriate log. Transportation resources will not be dispatched.

Objective/Criterion 3.c.2: OROs/School officials decide upon and implement protective actions for schools. (NUREG-0654, J.10.c, d, g)
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 participating public and private schools should demonstrate the capability to make prompt decisions on protective actions for students. School officials should demonstrate that the decision making process for protective actions considers (e.g., either accepts automatically or gives heavy weight to) protective action recommendations made by ORO personnel, the ECL at which these recommendations are received, preplanned strategies for protective actions for that ECL, and the location of students at the time (e.g., whether the students are still at home, en route to the school, or at the school).
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 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 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 by 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 specified above or indicated in the extent of play agreement.
Sub-element 3.c.2 - OROs/School officials decide upon and implement protective actions for schools

Vermont Extent of Play
EPZ Town EOCs will contact schools, childcare facilities, nursing homes and hospitals according to their procedures. Students and patients/residents will not be involved. No vehicles will be dispatched for precautionary transfer or evacuation. Special facilities will be interviewed by FEMA out of sequence prior to the May 2011 exercise.

Sub-element 3.d—Implementation of Traffic and Access Control
Intent
This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement protective action plans, including relocation and restriction of access to evacuated 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.

Objective/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 specified above or indicated in the extent of play agreement.

Sub-element 3.d.1 - Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel
Vermont Extent of Play
EPZ Town EOCs and the VSP will discuss their traffic and access control procedures with their respective FEMA Evaluators. Coordination will be demonstrated through

discussion and phone calls which will be logged but no personnel or equipment will be dispatched.
NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant. After an "on the spot" re-training by the State, the FEMA Evaluator will provide the participant another opportunity to re-demonstrate the activity that same day.

Objective/Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654, J.10.k)
Extent of Play
OROs should demonstrate the capability, as required by the scenario, to identify and take appropriate actions concerning impediments to evacuation. Actual dispatch of resources to deal with impediments, such as wreckers, need not be demonstrated; however, simulated contacts should be logged.
All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless specified above or indicated in the extent of play agreement.

Sub-element 3.d.2 - Impediments to evacuation are identified and resolved
Vermont Extent of Play
Each affected EOC staff (the five towns, the VSP and the state EOC) will demonstrate discussion based decision making regarding rerouting of traffic following a traffic impediment, in response to a evaluator question. No personnel or equipment will be deployed to the simulated scene but the EOC staff will discuss decision making and coordination with appropriate agencies and other EOCs as needed.

NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant. After an "on the spot" re-training by the State, 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 (applies to all criteria of this sub-element)
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to implement protective actions, based on criteria recommended by current Food and Drug Administration guidance, for the ingestion pathway emergency planning zone (IPZ), the area within an approximate 50-mile radius of the nuclear power plant. This sub-element focuses on those actions required for implementation of protective actions.

Objective/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)
Plume Pathway Extent of Play

Applicable OROs should demonstrate the capability to secure and utilize current information on the locations of dairy farms, meat and poultry producers, fisheries, fruit growers, vegetable growers, grain producers, food processing plants, and water supply intake points to implement protective actions within the ingestion pathway EPZ.
OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.
All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Ingestion Pathway Extent of Play
This is a State of Vermont only criterion.

Sub-element 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***
Vermont Extent of Play
Capabilities will be demonstrated in accordance with plans and procedures.
The State of Vermont will demonstrate the implementation of food pathway decisions. There will be a table top discussion and the appropriate forms/orders to implement interdiction at identified locations will be prepared.

Objective/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)
Plume Pathway Extent of Play
Development of measures and strategies for implementation of ingestion pathway zone (IPZ) protective actions should be demonstrated during exercise play by formulation of protective action information for the general public and food producers and processors. This includes the capability for the rapid reproduction and distribution of appropriate reproduction-ready information and instructions to pre-determined individuals and businesses. OROs should demonstrate the capability to control, restrict or prevent distribution of contaminated food by commercial sectors.
Exercise play should include demonstration of communications and coordination between organizations to implement protective actions. However, actual field play of implementation activities may be simulated. For example, communications and coordination with agencies responsible for enforcing food controls within the IPZ should be demonstrated, but actual communications with food producers and processors may be simulated.
All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Ingestion Pathway Extent of Play
This is a State of Vermont only criterion.

Sub-element 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***
Vermont Extent of Play
Instructional or informational messages on ingestion pathway protective measures will be developed for news briefings although broadcasts of messages will be simulated.
Pre-printed material such as agricultural booklets will be available for review.
Communications with food producers and processors will be simulated.

Sub-element 3.f—Implementation of Relocation, Re-entry, and Return Decisions (applies to all criteria of this sub-element)
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should demonstrate the capability to implement plans, procedures, and decisions for relocation, re-entry, and return. Implementation of these decisions is essential for the protection of the public from the direct long-term exposure to deposited radioactive materials from a severe accident at a commercial nuclear power plant.

Objective/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)
Plume Pathway Extent of Play
Relocation: OROs should demonstrate the capability to coordinate and implement decisions concerning relocation of individuals, not previously evacuated, to an area where radiological contamination will not expose the general public to doses that exceed the relocation PAGs. OROs should also demonstrate the capability to provide for short-term or long-term relocation of evacuees who lived in areas that have residual radiation levels above the PAGs.
Areas of consideration should include the capability to communicate with OROs regarding timing of actions, notification of the population of the procedures for relocation, and the notification of, and advice for, evacuated individuals who will be converted to relocation status in situations where they will not be able to return to their homes due to high levels of contamination. OROs should also demonstrate the capability to communicate instructions to the public regarding relocation decisions.
Re-entry: OROs should demonstrate the capability to control re-entry and exit of individuals who need to temporarily reenter the evacuated 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 and schools , and intermediate term housing for relocated persons.
Communications among OROs 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 otherwise indicated in the extent of play agreement.

Ingestion Pathway Extent of Play
The State of Vermont will be evaluated on this criterion. The State of New Hampshire will participate for practice only.

Sub-element 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
Vermont Extent of Play
The State of Vermont will demonstrate the implementation of Relocation, Re-Entry and Return. There will be a discussion based demonstration in the State EOC.

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. This does

not imply that plume exposure projections should be made from the field data. Adequate equipment and procedures are essential to such field measurement efforts.

Objective/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 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.

Sub-element 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
Vermont Extent of Play
A minimum of two field teams will each collect a minimum of three complete samples each consisting of an ambient radiation measurement, a soil sample and an air sample. Charcoal filter cartridges may simulate use of Silver Zeolite filter media. Simulated cartridges will be prepared for transportation to the Lab for analysis.
Field data may be provided by Controllers to the Accident Assessment (Plume Tracking) Team to facilitate the accident assessment process during the exercise.
By agreement with the Vermont Yankee Nuclear Power Station, Vermont plume tracking teams will define the edge of the plume occurring in Vermont or other designated area while Vermont Yankee tracking teams will determine the center line of the plume.

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

Objective/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. OROs should use Federal resources as identified in the Federal Radiological Emergency Response Plan (FRERP), and other resources (e.g., compacts, utility, etc.), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.
All activities must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless otherwise indicated in the extent of play agreement.

Sub-element 4.a.2 - Field teams are managed to obtain sufficient information to help characterize the release and to control radiation exposure
Vermont Extent of Play
Coordination of the transfer of samples to a lab will be simulated and discussed in an interview with the FEMA Evaluator. By agreement with the Vermont Yankee Nuclear Power Station, Vermont plume tracking teams will define the edge of the plume occurring in Vermont or other designated area while
Vermont Yankee tracking teams will determine the center line of the plume.

Objective/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 OROs. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-

of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.
OROs should use Federal resources as identified in the FRERP, and other resources (e.g., compacts, 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 otherwise indicated in the extent of play agreement.

***Sub-element 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**
Vermont Extent of Play
A minimum of two field teams will each collect a minimum of three complete samples each consisting of an ambient radiation measurement, a soil sample and an air sample**.** Charcoal filter cartridges may simulate use of Silver Zeolite filter media. Simulated cartridges will be prepared for transportation to the Lab for analysis.
Field data may be provided by Controllers to the Accident Assessment (Plume Tracking) Team to facilitate the accident assessment process during the exercise.
By agreement with Vermont Yankee Nuclear Power Station, Vermont plume tracking teams will define the edge of the plume occurring in Vermont or other designated area while Vermont Yankee tracking teams will determine the center line of the plume.

NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant. After an "on the spot" re-training by the State, 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 *(applies to all criteria of this sub-element)*
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to assess the actual or potential magnitude and locations of radiological hazards in the ingestion emergency planning zone (IPZ) and for relocation, re-entry and return measures.
This sub-element focuses on the collection of environmental samples for laboratory analyses that are essential for decisions on protection of the public from contaminated food and water and direct radiation from deposited materials.

Objective/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)
Plume Pathway Extent of Play

The ORO field teams should demonstrate the capability to take measurements and samples, at such times and locations as directed, to enable an adequate assessment of the ingestion pathway and to support re-entry, relocation, and return decisions. When resources are available, the use of aerial surveys and in-situ gamma measurement is appropriate. All methodology, including contamination control, instrumentation, preparation of samples, and a chain-of-custody form for transfer to a laboratory, will be in accordance with the ORO's plan and/or procedures.
Ingestion pathway samples should be secured from agricultural products and water. Samples in support of relocation and return should be secured from soil, vegetation, and other surfaces in areas that received radioactive ground deposition.
OROs should use Federal resources as identified in the FRERP, and other resources (e.g. compacts, nuclear insurers, etc), if available. Evaluation of this criterion will take into consideration the level of Federal and other resources participating in the exercise.
All activities must be 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.

Ingestion Pathway Extent of Play
The State of Vermont will be evaluated on this criterion. The State of New Hampshire will participate for practice only.

Sub-element 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***
Vermont Extent of Play
At least three (3) Post Plume sampling teams will be demonstrated. The sampling teams will use a pre-designated location to demonstrate their activities.
At least one sample of each of the following will be collected by each team: milk, water, soil and food crops or vegetation, The teams will demonstrate how the chain of custody will be established for each of the samples.
The samples (or a demonstration on how this will occur) will be delivered according to procedures to the VT State Lab for processing on day 2 of the exercise (May 4, 2010). Chain of custody will be demonstrated in this process. All samples will be delivered to the Lab.

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

Sub-element 4.c—Laboratory Operations ***(applies to all criteria of this sub-element)***
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to perform laboratory analyses of radioactivity in air, liquid, and environmental samples to support protective action decision-making.

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

Plume Pathway Extent of Play

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

The laboratory should be appropriately equipped to provide analyses of media, as requested, on a timely basis, of sufficient quality and sensitivity to support assessments and decisions as anticipated by the ORO's plans and procedures. The laboratory (laboratories) instrument calibrations should be traceable to standards provided by the National Institute of Standards and Technology. Laboratory methods used to analyze typical radionuclide's 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 otherwise indicated in the extent of play agreement.

Ingestion Pathway Extent of Play

This is a State of Vermont only criterion.

Sub-element 4.c.1 - The laboratory is capable of performing required radiological analyses to support protective action decisions

Vermont Extent of Play

The laboratory will demonstrate sample radio-analysis using samples collected in the field.

On May 4, 2011, the VT State Lab will demonstrate the receipt of samples of milk, water, food crops or vegetation and soil (soil samples from the tracking team and samples of milk, water, soil and forage from the sampling team.). The chain of custody will be demonstrated. The samples would have been dropped off on the previous day**.**

Through a process of discussion and demonstration on one of the samples, the Lab will demonstrate initial receipt, chain of custody determination and sample preparation for analysis. A discussion of how other sample types will be prepared for analysis and counted will be provided. The Lab will provide through discussion the method of

calibration of counting instruments, the library of isotopes and detection sensitivity. The Lab will discuss their internal Quality Control process and participation in EPA etc. spiked sample programs. The actual counting of samples will not be demonstrated as this would take too long. There will be no spiking of samples with radio isotopes.

EVALUATION AREA 5: Emergency Notification & 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 offsite response organizations (ORO) 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."

Objective/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. Effective October 1, 2001:The initial instructional message to the public must include as a minimum: 1) identification of the State or local government organization and the official with the authority for providing the alert signal and instructional message; 2) identification of the commercial nuclear power plant and a statement that an emergency situation exists at the plant; 3) reference to REP-specific emergency information (e.g., brochures and information in telephone books) for use by the general public during an emergency; and 4) a closing statement asking the affected and potentially affected population to stay tuned for additional information or that the population tune to another station for additional information. (10 CFR Part 50, Appendix E IV.D & NUREG-0654, E.5, 6, 7)
Extent of Play
Responsible OROs should demonstrate the capability to sequentially provide an alert signal followed by an initial instructional message to populated areas (permanent resident and transient) throughout the 10-mile plume pathway EPZ. Following the decision to activate the alert and notification system, in accordance with the ORO's plan and/or procedures, completion of system activation should be accomplished in a timely manner (will not be subject to specific time requirements) for primary alerting/notification. The initial message should include the elements required by current FEMA REP guidance.
For exercise purposes, timely is defined as "the responsible ORO personnel/representatives demonstrate actions to disseminate the appropriate information/instructions with a sense of urgency and without undue delay." If message dissemination is to be identified as not having been accomplished in a timely manner, the evaluator(s) will document a specific delay or cause as to why a message was not considered timely.
Procedures to broadcast the message should be fully demonstrated as they would in an actual emergency up to the point of transmission. Broadcast of the message(s) or test

messages is not required. The alert signal activation may be simulated. However, the procedures should be demonstrated up to the point of actual activation.
The capability of the primary notification system to broadcast an instructional message on a 24-hour basis should be verified during an interview with appropriate personnel from the primary notification system.
All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.

Sub-element 5.a.1 - Activation of the Prompt Alert and Notification System
Vermont Extent of Play
Actions to demonstrate public notification will be performed up to the point of actual transmission of the EAS message. In the initial notification the National Weather Service will be contacted and a "Test" message will actually be transmitted. The TSA and the five town EOCs will report receipt (or non receipt) of the test message. The three states (VT, NH, & MA) will coordinate each public notification.
The simulated activation of the sirens for all three (3) States by the Commonwealth of Massachusetts will be demonstrated. Brattleboro and Vernon may demonstrate actions necessary to sound the sirens but will not activate the sirens.
All States will coordinate activities for the activation of the NOAA tone-alert radios throughout the EPZ. Activation of the NOAA tone-alert radios by the State of Vermont will be demonstrated using a test message.
The simulated activation of the RENTS notification system for all 3 States by the State of New Hampshire will be demonstrated.
Criterion 5.a.2:
Sub-elements 5.a.2
Massachusetts Extent of Play
Not applicable
Sub-element 5.a.2
New Hampshire Extent of Play
Not applicable
Sub-element 5.a.2
Vermont Extent of Play
Not applicable

Objective/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)

Plume Pathway Extent of Play
OROs with FEMA-approved exception areas (identified in the approved Alert and Notification System Design Report) 5-10 miles from the nuclear power plant should demonstrate the capability to accomplish primary alerting and notification of the

exception area(s) within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The 45-minute clock will begin when the OROs make the decision to activate the alert and notification system for the first time for a specific emergency situation. The initial message should, at a minimum, include: a statement that an emergency exists at the plant and where to obtain additional information
.
For exception area alerting, at least one route needs to be demonstrated and evaluated. The selected routes should vary from exercise to exercise. However, the most difficult route should be demonstrated at least once every six years. All alert and notification activities along the route should be simulated (e.g., the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the mobile public address system will be conducted at some agreed upon location.
Backup alert and notification of the public should be completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. Backup route alerting needs only be demonstrated and evaluated, in accordance with the ORO's plan and/or procedures and the extent of play agreement, if the exercise scenario calls for failure of any portion of the primary system(s), or if any portion of the primary system(s) actually fails to function. If demonstrated, only one route needs to be selected and demonstrated. All alert and notification activities along the route should be simulated (e.g., the message that would actually be used is read for the evaluator, but not actually broadcast) as agreed upon in the extent of play. Actual testing of the Public Address system will be conducted at some agreed upon location.
All activities for this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, except as noted above or otherwise indicated in the extent of play agreement.
Ingestion Pathway Extent of Play
Not Applicable

Sub-element 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
Vermont Extent of Play
A selected back-up route alerting demonstration will occur out of sequence at a date to be determined but before the plume exercise. One route will be demonstrated by each municipality. This route will be different than the route demonstrated in the last exercise if multiple routes exist for a municipality.

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 OROs should have the capability to disseminate to the public appropriate emergency information and

instructions including any recommended protective actions. In addition, NUREG-0654 provides that OROs should ensure the capability exists for providing information to the media. This includes the availability of a physical location for use by the media during an emergency. NUREG-0654 also provides that a system be available for dealing with rumors. This system will hereafter be known as the public inquiry hotline.

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

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

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

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

OROs should demonstrate the capability to provide timely, accurate, concise, and coordinated information to the news media for subsequent dissemination to the public. This would include demonstration of the capability to conduct timely and pertinent media briefings and distribute press 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 press 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 press releases) and media information kits should be available for dissemination to the media.
OROs should demonstrate that an effective system is in place for dealing with calls to the public inquiry hotline. Hotline staff should demonstrate the capability to provide or obtain accurate information for callers or refer them to an appropriate information source. Information from the hotline staff, including information that corrects false or inaccurate information when trends are noted, should be included, as appropriate, in emergency information provided to the public, media briefings, and/or press 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 otherwise indicated in the extent of play agreement.

Sub-element 5.b.1 - OROs provide accurate emergency information and instructions to the public and the news media in a timely manner
Vermont Extent of Play
State EOC - Simulation Cell personnel will make calls simulating members of the public and media personnel. The Public Information staff will demonstrate receiving calls on the public information line. They will demonstrate identifying and properly handling rumor trends.
Joint Information Center - Controllers may act as media representatives. Information generated as a result of incoming calls to the Public Information staff at the state EOC will be included in a news briefing. At least one rumor trend will be included.
EPZ Town EOCs – Simulation Cell personnel will make calls to each town EOC simulating members of the public. Each Town EOC will demonstrate determining which call(s) may be handled by the Town EOC (inquiries about town response actions) and which call(s) must be referred to the Information Officer staff at the State EOC.
NOTE: If during the exercise, a participant demonstrates this sub-element unsatisfactorily, the FEMA Evaluator will inform the participant. After an “on the spot” re-training by the State, 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 OROs have the capability to implement radiological monitoring and decontamination of evacuees and emergency workers, while minimizing contamination of the facility, and registration of evacuees at reception centers.
Objective/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' vehicle. Expected demonstration should include 1/3 of the monitoring teams/portal monitors required to monitor 20% of the population allocated to the facility within 12 hours. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation.

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

***Sub-element 6.a.1* - Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees**
Vermont Extent of Play
The Emergency Worker Radiological Monitoring and Decontamination was demonstrated in November 2007 and will not be evaluated in 2011. The Bellows Falls Union High School Reception Center was evaluated in 2008 and will not be evaluated in 2011.

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

Sub-element 6.b—Monitoring and Decontamination of Emergency Worker Equipment
Intent
This sub-element is derived from NUREG-0654, which provides that OROs have the capability to implement radiological monitoring and decontamination of emergency worker equipment, including vehicles.

Objective/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 ORO's plans and procedures. Specific attention should be given to equipment, including vehicles that were in contact with individuals found to be contaminated. The monitoring staff should demonstrate the capability to make decisions on the need for decontamination of equipment, including vehicles, based on guidance levels and procedures stated in the plan and/or procedures. The area to be used for monitoring and decontamination should be set up as it would be in an actual emergency with all route markings, instrumentation, record keeping and contamination control measures in place. Monitoring procedures should be demonstrated for a minimum of one vehicle. . It is generally not necessary to monitor the entire surface of vehicles. However, the capability to monitor areas such as air intake systems, radiator grills, bumpers, wheel wells, tires, and door handles should be demonstrated. Interior surfaces of vehicles that were in contact with individuals found to be contaminated should also be checked.
Decontamination capabilities, and provisions for vehicles and equipment that cannot be decontaminated, may be simulated and conducted by interview.
All activities associated with this criterion must be based on the ORO's plans and procedures and completed as they would be in an actual emergency, unless noted above or otherwise indicated in the extent of play agreement.

Sub-element 6.b.1 - Monitoring and Decontamination of Emergency Worker Equipment
Vermont Extent of Play
The Emergency Worker Radiological Monitoring and Decontamination was demonstrated in November 2007 and will not be evaluated in 2011. The Reception Center at Bellows Falls Union High School was evaluated in 2008 and will not be evaluated in 2011.

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

Sub-element 6.c—Temporary Care of Evacuees
Intent
This sub-element is derived from NUREG-0654, which provides that OROs demonstrate the capability to establish relocation centers in host areas. Congregate care is normally provided in support of OROs by the American Red Cross under existing letters of agreement.

Objective/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(ies). However, availability of such items should be verified by providing the evaluator a list of sources with locations and estimates of quantities.

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

Sub-element 6.c.1 - Temporary Care of Evacuees
Vermont Extent of Play
Congregate care centers will not be activated. Current shelter surveys will be provided to FEMA for review. Based on FEMA's survey review, a tour of selected (some, all, or none) congregate care facilities that support the Reception Center at Bellows Falls, will be conducted if needed with a controller and an American Red Cross representative out of sequence

Sub-element 6.d—Transportation and Treatment of Contaminated Injured Individuals
Intent
This sub-element is derived from NUREG-0654, which provides that OROs should have the capability to transport contaminated injured individuals to medical facilities with the capability to provide medical services.

Objective/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.
OROs should demonstrate the capability to transport contaminated injured individuals to medical facilities. An ambulance should be used for the response to the victim. 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 en route, or deferred to the medical facility. Prior to using a monitoring instrument(s), the monitor(s) should demonstrate the process of checking the instrument(s) for proper operation. All monitoring activities should be completed as they would be in an actual emergency. Appropriate contamination control measures should be demonstrated prior to and during transport and at the receiving medical facility.
The medical facility should demonstrate the capability to activate and set up a radiological emergency area for treatment. Equipment and supplies should be available for the treatment of contaminated injured individuals.
The medical facility should demonstrate the capability to 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 otherwise indicated in the extent of play agreement.

Sub-element 6.d.1 - Transportation and Treatment of Contaminated Injured Individuals
Vermont Extent of Play
The Brattleboro Memorial Hospital was demonstrated out-of-sequence on September 29, 2010.

Scenario Narrative Summary and Timeline for Plume Phase

Vermont Yankee Nuclear Power Station
May 3rd 2011 NRC/FEMA Evaluated Exercise
Plume Portion (Confidential Material)

EXERCISE SEQUENCE OF EVENTS

The Exercise event starts with an earthquake detected onsite. The Seismic Monitor Alert alarm is received in the Control Room accompanied by several spurious alarms. The operations crew will enter procedure OP 3127 (Natural Phenomenon) 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 Con Demin Area are arcing and a chemical storage locker outside the Chemistry Lab was tipped over and small amount of liquid has spilled. A broken wire on 'B' Squib valve will result in a Squib valve continuity alarm on the Simulator CRP 9-5 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).

The Shift Manager (SM) will declare an **ALERT** based on Emergency Action Level HA1.1 (Ground motion > Operating Basis Earthquake (OBE) (0.07g) per analyses **AND** Earthquake confirmed by **any** of the following: Felt earthquake, National Earthquake Information Center, Control Room indication of degraded performance of systems required for the safe shutdown of the plant).

When the Alert is declared, the emergency response organization (ERO) is mobilized. Offsite notifications of the Alert declaration will be made to the States of Vermont, New Hampshire, Massachusetts by OP 3540, Control Room Actions during an Emergency. 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.

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. The EDG will have a mechanical trip of the Generator lockout alarm and will have to be reset. 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 Building Closed Cooling Water (TBCCW) System has separated from its anchor. An AO will report that the block wall next to “B” SBGT has crumbled and impacted the “B” SBGT housing.

Approximately 2 hours after the initiating event, another after-shock occurs that causes a turbine trip and scram signal but the reactor fails to scram automatically. Operators will insert a manual scram but some of the control rods will not fully insert causing an Anticipated Transient Without Scram (ATWS) event. Enough rods will insert to lower reactor power to about 20 percent and Standby Liquid Control (SLC) will be manually initiated to lower power. In addition to SLC initiation, Emergency Operating Procedure (EOP-2) will direct the crew to utilize procedure OP 3107 APP BB for alternate rod insertion. Alternative, and parallel, success paths include individual CRD insertion, closing of the CRD 56 valve, and multiple scrams, subsequent to bypassing Reactor Protection System (RPS) and Alternate Rod Insertion (ARI) logics per OP 3107 Appendices. Upon taking and completing these actions, the crew will be able to manually insert all but five 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 SS2.1 (Automatic **AND** manual scram were **not** successful after **any** RPS setpoint is exceeded **AND** Reactor power $\geq$ 2% (APRM downscale)).

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. The Main Steam Isolation Valves may be closed by operator action as per procedure OP 3152 and EOP-4.

Approximately 2 hours after the Site Area Emergency is declared, a final after-shock will cause a steam leak to occur upstream of HPCI 14, Steam Supply in the HPCI Room. A steam leakage area high temperature alarm annunciates in the CR Simulator indicating the leak, and a fire alarm will annunciate in the Reactor Building.

Sequence of Events (continued)

Operators will enter EOP-4 (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 High Range 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 400mR/hr for greater than 15 minutes. The Simulator CR crew will enter/continue in EOP-4 "Rad Release Control", and an emergency RPV depressurization may be executed (EOP-5). However, radiation levels on the Main Stack will continue to rise and exceed the General Emergency threshold value of 4000 mR/hr for ≥ 15 minutes (AG1.1).

When Main Stack exceeds 4000 mR/hr for ≥ 15 minutes, the EOF Emergency Director is expected to upgrade the event to a **GENERAL EMERGENCY (GE)** based on Emergency Action Level AG1.1 Stack High Range Monitor (Gas 3 [RM-17-155]) reading > 4000 mR/hr for ≥ 15 min. (Note 1)).

Alternatively, the Emergency Director may declare a GE based on FG1.1, loss of any two fission barriers with a potential loss of the third.

At the time of declaring the General Emergency, the Vermont Yankee ERO will issue Protective Action Recommendations (PARs) to the appropriate state authorities located at the Emergency Operations Facility (EOF). The PAR will be based on plant conditions that should include evacuating the 5 mile ring surrounding the plant and 5 miles downwind in the affected sub-areas in the Emergency Planning Zone (EPZ). In addition, a reminder is provided in the PAR that the states of Vermont, New Hampshire, and Massachusetts 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.

Timeline

Vermont Yankee Nuclear Power Station
May 3rd 2011 NRC/FEMA Evaluated Exercise
Plume Portion (Confidential Material)

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
-00:30	0730	Controllers in Position.	
-00:25	0735	Initial conditions Established. **{Message All-01}**	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.
-00:05	0755	Exercise Announcement **{Message CR-02}**	CR announcer makes initiating announcement over the plant PA system.
00:00	0800	Exercise Commences	Controllers and players are in position. Scenario begins.
00:05	0805	Earthquake sensed onsite **{Message SIM-03}**	The crew in the Control Room (Simulator) receives indications of an earthquake. The following alarm is received: • 9-7-M-7, Seismic Monitor Alarm The following other indications will be received: • Ground motion is felt by onsite plant personnel (reports to come in with later scenario messages.) • Several spurious alarms annunciate due to the ground motion (alarms to come in per timeline)
00:06	0806	Security informs the Control Room their elevated Bullet Resistant Enclosures (BREs) were shaking for about 20 seconds. All is quiet now. Aux Operator reports he observed lights shaking and a loud rumble in the Reactor Building. SLC Squib Valve continuity alarm at Simulator CR Panel 9-5. Cause is a broken wire on the 'B' Squib valve. **{Message SIM-04}**	The crew enters OP-3127(Natural Phenomenon) procedure and performs the actions. This will include the expected walk downs of the plant for damage. • 9-5-1-A SLC SQUIB VLV CONTINUITY LOSS

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
00:06	0806	Contingency Reactor Power Reduction or Reactor Scram message. **{Message SIM-5X or when needed}**	Controllers will issue this message only if the operating crew decides to take actions that are more conservative than those assumed for scenario purposes concerning reactor power reduction or inserting a reactor scram.
00:08	0808	Report of plant observations from earthquake event. **{Message Sim-06}**	An operator will report that over-head lights are arcing in the Con Demin panel area.
00:10	0810	Results of the plant seismic monitoring system are now available on the Seismic Report. **{Message SIM-07}**	This report will show that the ground motion from the earthquake exceeded the Alert level (operating basis earthquake)
00:10	0810	Report of plant observations from the earthquake event. **{Message SIM-08}**	The Rx Bldg AO will report that the block wall next to the "B" SBGT has crumbled and impacted the "B" SBGT housing. A chemical storage locker outside the Chemistry Lab will have tipped over and a small amount (< 1 quart) of liquid has spilled on the floor.
00:23	0823	National Earthquake Center contacted for information concerning the earthquake activity. (**Message Sim-11 when needed)**	Report from the National Earthquake Center that a magnitude 4.5 earthquake took place at 42°59'57.60"N, 73°28'4.85" W. It is located East of Saratoga New York, about 50 miles from the Vermont Yankee Nuclear Power Station.
00:25	0825	**Alert Declared**	Shift Manager (SM) declares an **ALERT** per **EAL HA1.1** (An Earthquake onsite which has been determined to be greater than OBE)
00:25	0825	**Alert Announcement** **{Message CR-09}**	CR announcer announces Alert over plant PA system. ERO is mobilized. Offsite notifications are made.
00:25	0825	**Plant Support Bldg (PSB) Alert Announcement** **{Message CR-10 when needed}**	Control Room announces Alert over plant PSB PA system.

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
00:25	0825	ERO Mobilization	The ERO should be mobilizing and activating Emergency Response Facilities. During the ERO activation the plant may experience minor after-shocks.
00:40	0840	Contingency Alert message. **{Message SIM-12X}**	Controllers will issue this message only if the Alert has not been declared by this time.
01:25	0925	Facility Activation	TSC, OSC, and EOF should be activated. On-call ED takes over command and control of the emergency.
01:20	0920	Control Room requests TSC/OSC to continue with on-going plant event-related tasks: • Plant walk-downs and inspections. **{Message OSC-13 when needed}** **{Message OSC-14 when needed}**	TSC/OSC expected to support requested work activities and dispatch OSC teams into the field as needed. • Report from the field team that a pipe support on "A" TBCCW has become detached from its anchor. • Report from the field that the block wall next to the "B" SBGT has crumbled and impacted the "B" SBGT housing.
01:20	0920	News bulletin issued concerning the earthquake event to all onsite and off-site facilities. **{Message All-15 when needed}**	News Release issued stating that a 4.5 magnitude earthquake occurred in East of Saratoga New York.
01:30	0930	A minor after-stock occurs that gives an EDG "B" System Trouble alarm in the Control Room.	Control Room should request TSC/OSC to investigate EDG trouble and lockout alarm and may initiate additional plant walk downs.
01:45	0945	OSC team dispatched to investigate EDG "B" trouble alarm. **{Message OSC-16 when needed}**	OSC team will find that the EDG B has a generator lockout that is tripped and needs to be reset.

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
02:05	1005	Another after-shock occurs that causes the "B" Moisture Separator Drain Tank level control valves to fail closed. Resulting in a high level trip of the main turbine which initiates an automatic scram signal. Also, an ADS Power Monitor failure alarm will render all SRVs inoperable. **{Message SIM-17 when needed}**	Operators notice that the reactor did not scram on the turbine trip. Operators will insert a manual scram but some of the control rods will not fully insert. The TSC/OSC will be informed as time permits.
02:10	1010	Anticipated Transient Without Scram (ATWS) with Rx Power greater than 2%.	Emergency Operations Procedures will direct the crew actions. Enough rods will insert to lower power to about 20%. Simulator response will require the crew to initiate Standby Liquid Control (SLC).
02:15	1015	Crew orders actions per EOPs.	EOPs will direct crew to utilize procedures for alternate rod insertion. Alternative, and parallel, success paths include individual CRD insertion, closing of the CRD 56 valve, and multiple scrams, subsequent to bypassing RPS and ARI logics per procedure. OSC teams will be dispatched to take appropriate actions.
02:20	10:20	**Site Area Emergency (SAE) Declared**	After the ATWS event, the EOF will declare the **SAE** based on **EAL SS2.1** (Auto and Manual Scram signals present with Reactor Power > 2%).
02:25	10:25	**SAE Announcement {Message CR-18}**	CR announcer announces SAE over plant PA system. Offsite notifications are made.
02:25	1025	OSC team(s) dispatched to perform appropriate actions per procedure. **{Message OSC-19 when needed}**	Team reports back that CRD 56 valve is closed. The crew will be able to manually insert all but five control rods to shutdown the reactor. (Subcritical)
02:30	1030	Contingency SAE message. **{Message EOF-20X}**	Controllers will issue this message only if the SAE has not been declared by this time.
02:30	1030	Crew backs up PCIS isolations and discovers HVAC 9,10,11,12 have failed open and will not shut.	Control Room will contact TSC and OSC for attempt to isolate valves.

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
02:35	1035	Main Steam and Off-gas Rad Monitors alarm. **{Message SIM-21}**	Main Steam radiation levels are trending upward due to fuel failure occurring with after-shock. Crew may isolate MSIVs before reaching alarm set point.
03:30	1130	All Control Rods EXCEPT 5 are fully inserted.	Control Rods are inserted either via one or more methods specified in EOP-2.
03:35	1135	The final after-shock is felt. **{Message TSC-22 when needed}**	The following indications are received in TSC and OSC facilities: • Ground motion • Overhead lights flickering
03:37	1137	Steam Leak located in the HPCI Corner Room. **{Message SIM-23}**	Operators should determine that a steam leak has occurred in the HPCI Corner Room. HPCI fails to isolate. Manual isolation attempts from the Control Room are unsuccessful. The following alarms/indications are received: • Fire Alarms in Rx Bldg will annunciate. • Area hi temp alarm annunciates on Stm Leak Detection Panel. • ARMs in the Reactor Building will alarm. • RB evacuation announcement should be made. Crew enters EOP-4 due to high area temperature. Crew may enter OP 3020 for Fire alarm. Crew may request assistance from TSC/OSC to close HPCI 15 & 16.
03:40	1140	Crew carries out EOP-4 actions and investigates the steam leak.	Requests for operator and RP to perform actions IAW EOP-4. Crews may not enter RB based on area temperatures.

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
03:45	1145	High Main Stack Radiation Levels. **{Message SIM-24}**	Operators recognize High Main Stack Radiation. The following alarms/indications are received: • STACK GAS RAD MON SYS 1 TRBL • STACK GAS RAD MON SYS 2 TRBL • STACK GAS RAD HI RANGE MON TRBL
03:50	1150	Steam leak continues and expands throughout the Reactor Building.	Area temps throughout the Reactor Building continue to rise. Main Stack radiation levels also continue to rise significantly.
03:50	1150	EOP-4 Actions and HPCI Room Leak. **{Message OSC-25 when needed}**	Operator and RP will proceed with EOP-4 actions and investigate the leak. This team will report the following: • RP- Radiation levels on the north side ground floor 252' are elevated but as soon as you traverse to the south side radiation levels are > 2R and rising. • Steam in this area prevents access into the south west side of the Rx Bldg ground floor.
04:00	1200	EOP-5 Actions Emergency RPV Depressurization **{Message SIM-26}**	CR crew will take action per EOP-4 and utilize EOP-5 to direct emergency depressurization. Crew will direct Alternate depressurization methods due to SRV failure.

Elapsed Time* (Hr:min)	Actual Clock Time*	Event	Details/Expected Actions
04:05	1205	**General Emergency (GE) Declared** (Main Stack Radiation monitors exceed 4000 MR/HR.	When Main Stack exceeds 4000 MR/HR the EOF will declare a **GE** based on **EAL AG1.1** (Valid Main Stack radiation monitor reading greater than 4000 MR/HR for >15min). A potential exists for a GE to be declared on FG1.1, loss of two fission product barriers with a potential loss of the third. Off-site Protective Action Recommendations should be formulated and issued with General Emergency declaration.
04:10	1210	GE Announcement **{Message CR-27}**	CR announcer announces GE over Public Address System. Offsite notifications are made.
04:20	1220	Contingency GE **{Message EOF-28X}**	Controllers will issue this message only if a GE has not been declared by this time.
04:30	1230	OSC team investigation and repair activities for HPCI isolation valve failure **{Message OSC-29 when needed}**	Attempts to actuate HPCI-16 ACB in the Cable Vault are successful and the valve closes with indication on CRP 9-3.
05:30	1330	Exercise Termination **{Message CR-30, All-31 and All-32}**	The exercise will be terminated when sufficient time has elapsed to allow appropriate objectives to be demonstrated or evaluated.

Vermont Yankee Nuclear Power Station
2011 Ingestion Pathway Evaluated Exercise
SCOPE AND DETAILED SEQUENCE OF EVENTS (INGESTION IPX)

SCOPE

The scope of the 2011 Vermont Nuclear Power Station (VYNPS) Ingestion Pathway Evaluated Exercise is focused on the activities of the State agencies responsible for determining and implementing post-radiological emergency measures during the postplume phase of a simulated accident at the VYNPS. 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 State of Vermont 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 Spring with the date being Wednesday, May 4, 2011. The specific schedule of events and timing of exercise events is provided in the table presented below and the detailed sequence of events.

Vermont Yankee Nuclear Power Station
2011 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	Transition from Plume Exposure Phase Exercise and conduct FRMAC Advance Party Meeting • 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/FRMAP person to hold/walkthrough of the Advance Party Meeting.)	1500/1530	State EOCs and VYNPS EOF	• 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.

Event No./Simulated Scenario Time	Activity Description	Date	Time	Location(s)	Participants
Event 2 (Out of sequence)	Post-Emergency Environmental Sample Collection	Morning of Day after Plume Portion of the Exposure Exercise	TBD	Designated Muster Point and Predetermined Sampling Locations	• 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	• 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	• 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.

Vermont Yankee Nuclear Power Station
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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 Vermont EOC only	• 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 Vermont EOC	• 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.

APPENDIX E: STRENGTHS

Vermont Yankee Graded Exercise
May 3-4, 2011
Strengths-- Vermont

Vermont Emergency Operations Center (EOC)

The senior staff meetings at the Vermont EOC were well-organized, focused, and productive. The checklist format used during the meetings allowed action items to be recapped in an efficient manner by the Planning Section Chief. This organized format also saved time, providing for more constructive supervision of Vermont EOC staff and implementation of precautionary and protective action decisions. Staff showed flexibility and skill in dealing with real-world events occurring simultaneously with the exercise.

Vermont Emergency Operations Facility (EOF)

The Vermont EOF staff performed well and worked effectively together. The Radio Amateur Civil Emergency Service (RACES) representatives had an active role in providing support and ensuring that updated information was provided. The Vermont Plume Tracking Team staff increased the efficiency of the vital information flow.

Vermont Joint Information Center (JIC)

The Public Information Officer (PIO) ensured the staff verified all information received. The JIC team was very cohesive and worked well under pressure to deliver information to the public.

Vermont Plume Tracking Teams 1 & 2

Team members showed enthusiasm and dedication and successfully demonstrated their activities. The new state practice of issuing colored badges to emergency workers will speed access to operating areas by simplifying identification at traffic and access control points.

Rockingham State Police Warning Point

The Dispatcher at the Rockingham State Warning Point was experienced and knowledgeable in the Dispatcher Guide and in the operation of the Device Assignment Client System.

Vermont Alternate Warning Point

The staff at the Derby 911 center displayed professionalism and teamwork when defining the implications of an event. They also recognized the need for receipt of updated detailed information to ensure 911 center needs are met.

Vermont 211 Call Center

In addition to the communicators available at the 211 Call Center, call center liaisons were staffed at the Vermont EOC and the Vermont JIC. The placement of the two liaisons expedited

communications among the three facilities. Volunteers were utilized to supplement the call center staff and enabled the 211 Call Center to answer all incoming calls in a timely manner.

Vermont Field Sampling Team Coordinator

The team coordinator demonstrated an exceptional ability to respond to events beyond those delineated in his procedures. He responded quickly and decisively when a sampling team reported a malfunctioning radiation detection instrument, and showed skill in addressing new issues as they arose.

Vermont Field Sampling Teams 1, 2 & 3

All three Vermont field sampling teams demonstrated great teamwork and interagency coordination. The distribution of team duties was handled very well and clearly supported the strengths of each team member. The teams demonstrated collaboration and integration thoroughly, which supported successful collection of the field samples.

Vermont State Laboratory

The laboratory staff did an excellent job. Due to the quality of the procedures and the training of the staff, contamination control was excellent in sample receipt, sample preparation and sample analysis.

Brattleboro EOC

The special population's team at the Brattleboro EOC did an outstanding job. Their knowledge, dedication to the individuals they are responsible for and their enthusiasm is the standard all others should strive to emulate.

Dummerston EOC

The Dummerston EOC staff demonstrated exceptional attention to detail by reviewing, confirming, and taking follow-up action to exercise information as it came into the EOC. Staff worked well together, displaying excellent coordination and teamwork.

Guilford EOC

The Emergency Management Director (EMD) demonstrated excellent direction and control. He took initiative to contact the Vermont EOC to clarify any questions and was vigilant in ensuring no residents would be evacuated through the plume.

Halifax EOC

The staffs of the Halifax EOC were knowledgeable and positive. During the exercise, the staff demonstrated unity throughout their response operations. The familiarity of the Halifax EOC staff with the radiological response plans, procedures and roles was evident by the fluid

implementation of these plans from the start to the completion of the exercise.

Vernon EOC

The Vernon EOC staff clearly demonstrated their knowledge of their plans and procedures and referred to them when a staff member was not sure of a required action or response. The EMD was a strong leader who kept on top of the situation, frequently advising the staff and providing guidance when necessary. The staff worked extremely well together and helped each other with the tasks at hand.

Vermont Yankee Graded Exercise
May 3, 2011
Strengths—New Hampshire

New Hampshire Emergency Operations Center (EOC)

New Hampshire EOC staff were proactive and very conscientious in performance of their duties. Specifically, the staff located at the 24-hour warning point was tenacious about getting information shared in a timely manner. Furthermore, the interaction and coordination in the New Hampshire EOC was positive and timely, especially with the other states. The staff showed flexibility and skill in dealing with real world events occurring simultaneously with the exercise.

New Hampshire 911 Call Center

The team was very proactive and coordinated efforts to ensure information provided to the public was timely and accurate.

New Hampshire Joint Information Center (JIC)

The New Hampshire JIC team demonstrated professionalism, commitment to training and a thorough working knowledge of the New Hampshire plans and procedures during the exercise.

New Hampshire State Police Troop C

The New Hampshire State Police Assistant Commander of Troop C and his staff demonstrated excellent adherence to the organization's procedures. Throughout the exercise, every item on the checklist for each Emergency Classification Level (ECL) was addressed efficiently and thoroughly. Similar results were achieved by utilizing a comprehensive script for emergency worker exposure control briefings and issues.

New Hampshire Field Monitoring Teams 1 & 2

The New Hampshire Field Monitoring Teams provided clear and concise communications to the Monitoring Team Coordinator. All field monitoring data was provided to the Coordinator using proper alphanumeric language. Team members cooperated well together and worked as a cohesive team.

New Hampshire State Warning Point

The dispatcher on duty at the New Hampshire State Warning Point was diligent in her duties to quickly contact the required response agencies to ensure the New Hampshire EOC was adequately staffed and able to respond to the exercise.

New Hampshire Emergency Operations Facility (EOF)

Upon their arrival at the EOF, the Homeland Security and Emergency Management (HSEM) Liaisons found they were not able to consistently access New Hampshire's WebEOC due to the system being overwhelmed by the amount of system users. They seamlessly were able to provide timely and accurate information updates by telephone to the New Hampshire EOC, until the router problem was fixed.

Cheshire County Sheriff's Office

The Cheshire County Sheriff Dispatch Center personnel were very comfortable with their responsibilities during the exercise. They were training a new member of their staff and allowed her the opportunity to play during the exercise and carry out the assigned tasks. Everyone in the dispatch center was knowledgeable, well-prepared, and participated equally in the exercise.

Chesterfield EOC

The Selectman, Emergency Management Director (EMD), Police, Fire, School District and Highway Department created a collaborative working relationship focused on the whole of the community. They worked together to create a common operating picture and anticipated how their response efforts will affect the whole community's welfare. Plans and procedures for the Chesterfield EOC staff were well-organized with essential information and task checklists. Staff were trained to use the checklists to fulfill the responsibilities assigned to their EOC position.

Hinsdale EOC

The EMD at the Hinsdale EOC was very proactive. He anticipated the need to evacuate students and staff from the Hinsdale school prior to the recommendation from the State. He also anticipated the need to evacuate EOC staff by ordering their relocation in concert with the evacuation of the town.

Richmond EOC

The Richmond EMD and Fire Chief together did an exemplary job of direction and control during this exercise. The Deputy Fire Chief was quickly trained on the communications and did an excellent job in receipt and control of emergency information. Also of mention was the RADEF Coordinator: the dosimetry briefing was thorough and easily understood. The emergency workers interviewed were well aware of the use of dosimetry and KI.

Swanzey EOC

The Swanzey EOC staff exhibited a proactive approach to their duties, continuously reviewing checklists and procedures, taking measures to prepare for possible required actions, evaluating resources compared to expected response actions, and reviewing procedures for adequacy and accuracy.

Winchester EOC

The exercise participants each followed the detailed checklists outlining their various responsibilities, and as a result were very thorough in implementing all required actions and activities.

WKNE

The WKNE Operations Manager was evaluated by interview following the end of the exercise. The station was knowledgeable of their Emergency Alert System roles and responsibilities and well-prepared to respond.

Southwestern New Hampshire District Fire Mutual Aid local warning point

This agency had state-of-the-art equipment, seasoned dispatchers and a thorough knowledge of the emergency response procedures. They carried out all communications and notifications promptly and worked extremely well as a team.

Keene EOC

The Keene EMD and EOC staff worked together in a seamless fashion. The EMD demonstrated outstanding command and control during the entire exercise and was proactive in ensuring accurate information was received. The EMD ensured that appropriate resources were being coordinated by the local organizations represented at the EOC.

Vermont Yankee Graded Exercise
May 3, 2011
Strengths-- Massachusetts

Massachusetts Emergency Operations Center (EOC)

The Massachusetts Emergency Management Agency (MEMA) Director and the entire MEMA EOC staff did an excellent job throughout the exercise. All staff worked together to ensure a successful outcome. Staff was knowledgeable and was cross trained in various positions, which allowed for effective and efficient team participation. The MEMA Director and staff were proactive in implementing and thinking about possible future scenarios to ensure safety and timely responses. The staff showed flexibility and skill in dealing with real world events occurring simultaneously with the exercise.

Massachusetts 211 Call Center

Good leadership and cooperative efforts by all participants at the Massachusetts 211 Center led to an impressive display of the effectiveness of their program.

Massachusetts Warning Point

The staff used their checklist effectively, lists and plans efficiently, and showed dedication in accomplishing the tasks at hand.

Massachusetts Emergency Operations Facility (EOF)

MEMA and the Massachusetts Department of Public Health (MDPH) at the EOF worked well together as a team. They also worked well with the EOF staff, including those from Vermont, New Hampshire, and the Nuclear Regulatory Commission (NRC) to resolve any differences.

Massachusetts Joint Information Center (JIC)

The Massachusetts JIC was activated, organized, managed, and accomplished by a professional and dedicated staff. News releases were distributed to the media very efficiently. Media briefings were conducted in a commendable manner.

Massachusetts Field Monitoring Teams 1 & 2

Nuclear Incident Advisory Team members demonstrated a professional approach, taking the exercise seriously and performing all their operations flawlessly. They were knowledgeable in all aspects of radiological field monitoring, well trained and practiced, and well integrated.

MEMA Region III/IV EOC

The operations, facilities, plans, and procedures were superbly managed at MEMA Region III/IV in Agawam. The coordination between the Manager, Operations Chief, and Tech Hazards Specialist was thorough, seamless, proficient, and mutually supportive. The leadership team and the local liaisons provided detailed direction, communication, and coordination with the communities.

Bernardston EOC

The Bernardston Emergency Management Director (EMD) effectively resolved any conflicting information concerning the status of the simulated radiological release. The Bernardston Communications Team quickly and effectively tracked and reported emergency action directives and notifications.

Colrain EOC

The staff effectively confirmed their abilities to provide direction and control, implement protective actions, identify and resolve problems, and perform necessary functions to protect the citizens of their jurisdiction. It was evident that the entire EOC staff was dedicated to the health and safety of the public.

Gill EOC

The Gill EMD and EOC staff conducted frequent briefings and effectively communicated with all response organizations. The EOC staff continuously analyzed the developing situation, determining if needs for responses were met and preparing for additional resources if needed. The highly organized EOC structure and proactive attitude of the Gill EMD and EOC staff greatly contributed to a successful exercise for Gill.

Greenfield EOC

The Greenfield EMD maintained a very well-organized and detailed All-Hazards Special Needs Binder. The binder was organized in a manner that allowed for immediate access of resource needs. The EMD should be commended for his efforts in ensuring that resources are available for all residents that need assistance during an emergency.

Leyden EOC

The Leyden EOC staff displayed resiliency through cross training. During the exercise the police responded to a real emergency. The EMD, with the police, sent an officer to the situation, and the liaison continued her role and also filled the role of the police chief until he returned. The Dosimetry Coordinator, with agreement from the EMD, proactively briefed the emergency workers on dosimetry and KI.

Northfield EOC

The Town of Northfield cross-trained all responding agency representatives to perform satisfactorily in several functional positions. Each responder was able to effectively represent functional positions outside of their primary role. This added depth to Northfield's pool of responders and also aided in the level of cooperation between responding agencies.

Warwick EOC

The Staff at the Warwick EOC demonstrated a thorough knowledge of the procedures and also providing training to new volunteers during a very successful exercise. The EMD regularly asked the Communication Officer to verify information that seemed incomplete or inaccurate. This demonstrated their strong level of confidence in responding to an emergency.

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