



# Vermont Yankee Power Station Brattleboro Memorial Hospital

MS-1 Drill – December 9, 2015  
Radiological Emergency Preparedness Program

Final Report

FEMA Region I



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**FEMA**

# **Final Drill Report**

## **Vermont Yankee Power Station**

**Licensee: Entergy Nuclear**

**Exercise Date: December 9, 2015**

**Report Date: February 24, 2016**

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**U.S. DEPARTMENT OF HOMELAND SECURITY  
FEDERAL EMERGENCY MANAGEMENT AGENCY**

**RADIOLOGICAL EMERGENCY PREPAREDNESS**

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## **I. EXECUTIVE SUMMARY**

On December 9, 2015, staff from the FEMA Region I Radiological Emergency Preparedness Branch evaluated a Medical Services (MS-1) Drill at the Brattleboro Memorial Hospital. The purpose of the drill was to assess the capability of the Brattleboro Memorial Hospital, Brattleboro, VT and the Rescue Inc. Ambulance Company, Brattleboro, VT to respond to a radiological emergency at the Vermont Yankee Nuclear Power Station, Vernon, VT. This drill was held in accordance with FEMA's policies and guidance concerning the exercise of the Brattleboro Memorial Hospital and local radiological emergency response plans (RERP) and procedures.

FEMA wishes to express our appreciation for the efforts of the many individuals in the Brattleboro Memorial Hospital Emergency Department and support staff, Rescue Inc. Ambulance Company, Vermont Division of Emergency Management and Homeland Security, and Entergy Vermont Yankee who participated in this drill.

It should be noted that this is projected to be the final FEMA-evaluated drill in the Vermont Yankee Emergency Planning Zone. For the past 44 years, FEMA's federal, state, local and private sector partners have striven every day to protect the public within the communities surrounding Vermont Yankee. This was readily apparent during this exercise in the dedication, focus, teamwork and skill exhibited by exercise participants.

Protecting the public health and safety is the full-time job of most of the drill 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 readily apparent during this drill. We at FEMA are grateful for and appreciative of the decades of hard work by our dedicated partners in preparedness throughout the Vermont Yankee Emergency Planning Zone.

This report contains the final evaluation of the MS-1 Drill.

The hospital and the Rescue Inc. Ambulance Company demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no deficiencies and no Areas Requiring Corrective Action (ARCA) identified as a result of this drill.

## II. INTRODUCTION

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

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

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

- Taking the lead in offsite emergency planning and in the review and evaluation of Radiological Emergency Response Plans (RERPs) and procedures developed by state and local governments;
- Determining whether such plans and procedures can be implemented on the basis of observation and evaluation of exercises of the plans and procedures conducted by state and local governments;
- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated December 7, 2015; and
- Coordinating the activities of Federal agencies with responsibilities in the radiological emergency planning process:
  - U.S. Department of Commerce
  - U.S. Nuclear Regulatory Commission
  - U.S. Environmental Protection Agency
  - U.S. Department of Energy
  - U.S. Department of Health and Human Services (HHS)
  - U.S. Department of Transportation
  - U.S. Department of Agriculture
  - U.S. Department of the Interior
  - U.S. Food and Drug Administration

Representatives of these agencies serve on the DHS-FEMA Region I Radiological Regional Assistance Committee (RAC), which is chaired by the FEMA RAC Chair Person.

Initial formal submission of the RERPs for the Vermont Yankee Nuclear Power Station to FEMA Region I by the State of Vermont and involved local jurisdictions occurred in April 1980, by the State of New Hampshire in October 1981, and by the Commonwealth of Massachusetts in December 1979 and include recent revisions to plans and procedures.

An MS-1 drill was conducted on December 9, 2015 to assess the capabilities of the Brattleboro Memorial Hospital and the Rescue Inc. Ambulance Company in implementing their RERPs and procedures to protect public health and safety during a radiological emergency involving the Vermont Yankee NPS. The purpose of this drill report is to present the drill results and findings on the performance of the offsite response organizations (ORO) during a simulated radiological emergency.

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

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

- NUREG-0654/FEMA-REP-1, Rev. 1, "Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants," November 1980;
- "Radiological Emergency Preparedness Program Manual" FEMA P-1028 July 2015

Section III of this report, entitled "Drill Evaluation and Results," presents detailed information on the demonstration of applicable exercise objectives at each jurisdiction or functional entity evaluated in a jurisdiction-based, issues-only format. There were no Deficiencies or ARCAs identified during the conduct of this drill. There were no unresolved ARCAs to correct from previous drills.

### III. DRILL EVALUATION AND RESULTS

#### Participating Agencies:

Rescue Inc. Ambulance Company  
Brattleboro Memorial Hospital Emergency Department  
Entergy's Vermont Yankee Nuclear Power Station (Not evaluated by FEMA)

The following is the status of functional entities evaluated.

- 1) **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.**

**MET: Criterion 6.d.1**

- (b) DEFICIENCIES: NONE**
- (c) AREAS REQUIRING CORRECTIVE ACTIONS: NONE**
- (d) NOT DEMONSTRATED: NONE**
- (e) PRIOR ARCAs RESOLVED: NONE**
- (f) PRIOR ARCAs UNRESOLVED: NONE**

#### **A. Rescue Inc. Ambulance Company, Brattleboro, Vermont**

The Rescue Inc. Ambulance Company of Brattleboro, Vermont demonstrated an outstanding ability to respond to, provide basic treatment for, and professionally transport an injured and radiologically contaminated individual during this exercise.

Rescue Inc. began exercise play at 0845 by conducting a radiological pre-brief and issuance of dosimetry to the ambulance crew. This dosimetry, consisting of a Direct Reading Dosimeter (expiration 7/5/2016) and Ludlum-26 Permanent Reading dosimeter (expiration 8/5/2015) is carried aboard the ambulance at all times. The leader of the two-person crew was knowledgeable in his conducting of the radiological briefing, highlighting general protective measures, personal protective equipment (PPE), ambulance-specific capabilities and cross contamination concerns.

The ambulance received the simulated radio call at 0801 for a female patient in the maintenance area of the power plant with a hand laceration and contamination by both hydraulic oil and a radioactive substance. This call also served to validate the two-way

communications capability between the dispatch center and ambulance.

The ambulance crew then contacted Brattleboro Memorial Hospital in order to inform them of the possible incoming radiologically contaminated patient, donned PPE and made entry into the ambulance bay that simulated the plant for this exercise.

The ambulance team conferred with the Entergy Health Physicist who was tending to the simulated victim and received an initial patient condition brief. The team then began to perform pre-hospital care by isolating the possibly radiologically contaminated area, decontaminating the portions of the victim contaminated with hydraulic oil and dressing the wound. Once the patient was stabilized and prepared for transport, the medical team cocoon-wrapped the patient to further isolate the area of contamination and strapped her down to the gurney. The gurney was then moved to the ambulance, where additional readings of the patient were taken en route to the hospital. While en route, the ambulance provided additional information to the hospital regarding the patient's status.

Upon arrival at the hospital, the ambulance was directed to a portal equipped with step-off pads and otherwise roped off to limit the possibility of radiological contamination spreading. After patient hand off to hospital staff, the EMT's on the ambulance checked their dosimetry, were screened for contamination by hospital staff and then had their ambulance checked for contamination. Finding none, the ambulance portion of the exercise was terminated.

- 2) 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.**

**MET: Criterion 6.d.1**

**(a) DEFICIENCIES: NONE**

**(b) AREAS REQUIRING CORRECTIVE ACTIONS: NONE**

**(c) NOT DEMONSTRATED: NONE**

**(d) PRIOR ARCAs RESOLVED: NONE**

**(e) PRIOR ARCAs UNRESOLVED: NONE**

## **B. Brattleboro Memorial Hospital, Emergency Department, Brattleboro, Vermont**

During the December 9, 2015 Medical Service Drill the Brattleboro Memorial Hospital staff demonstrated the capability to activate and set up a radiological emergency area for treatment. Set-up of the facility was in accordance with the plans and procedures. Considerations for controlling contamination were adequately applied. The use of anti-contamination clothing was adequately demonstrated by the staff.

The Brattleboro Memorial Hospital staff demonstrated the capability to make decisions on the need for decontamination of the patient. Treatment of the injury was given priority over radiological concerns related to decontamination. Use of the contamination survey meter was correct. Contamination control measures taken during treatment of the patient and during handling of equipment and supplies were adequate. Decontamination of the patient was completed in accordance with the established plan and procedures.

Brattleboro Memorial Hospital received a report via phone that a Vermont Yankee Nuclear Power Station employee had a right hand injury with confirmed radiological contamination. The patient arrived via Rescue Inc. ambulance. Hospital staff set up floor mats and barriers for the ambulance to park in. The hospital staff treating the patient used gowns, two layers of gloves, 0-500 mR dosimeters and Inlight Systems TLDS before interacting with the patient. The patient's room was set up with barriers to demarcate the contamination and clean area.

The patient had a hand laceration with undressed readings of 15 mR/hr and dressed readings at 4mR/hr. The patient's radiation monitoring was being completed by a health physicist (HP) from VYNPS. The Emergency Physician directed the nursing staff to use normal saline to wash the wound. This was done three times, and each time the VYNPS HP would monitor the wound. After the third washing, the patient's hand was at background readings. The patient was then transferred to a wheelchair for further treatment.

All activities described in the demonstration criterion were carried out in accordance with the plans, procedures, and extent-of-play agreement.

## APPENDIX 1.

### DRILL EVALUATORS

The following is a list of the personnel who evaluated the MS-1 Drill for the Vermont Yankee Nuclear Power Station on December 9, 2015.

<u>EVALUATION SITE</u>	<u>CRITERION</u>	<u>EVALUATOR</u>	<u>ORGANIZATION</u>
Rescue Inc. Ambulance Company	6.d.1	Ryan Jones	FEMA - REP
Brattleboro Memorial Hospital	6.d.1	Brian Kennedy	FEMA - REP

## APPENDIX 2.

### SCENARIO OVERVIEW

#### Initial Conditions

The reactor is operating at 0% power. Plant operators are performing their normal duties. All proper radiation protection practices are being observed. Weather conditions will be as observed by the participants.

#### Narrative Summary

Note: All technical data on the incident is contained in the Message cards.

A plant worker is working on removed RHR Check Valve Bonnet using a Hy-Torque to remove the bolts in the hot machine shop. The worker tells his co-worker, who is holding the pump during the work being performed, that he is ready to start the removal process. A short time later, the hydraulic line falls spay the worker form the waist down with hydraulic oil and jamming the his hand between the tool and the bonnet. The co- worker is able to remove the tool from the bolt freeing the trapped hand. However the individual has a laceration of his left hand, with pain to the same arm and he the hand becomes contaminated when he was jammed by equipment. The co-worker notifies the Control Room of the incident. The on-site medical response team and a Radiation Protection technician respond to the situation.

( Rescue, Inc. ambulance personnel arrive, assist in establishing vital signs and packaging the patient if necessary, then transport the individual to Brattleboro Memorial Hospital. A Radiation Protection technician will exercise contamination control measures during the process of patient packaging, pickup, and transport to the waiting ambulance.

The ambulance from Rescue, Inc. exits the simulated Protected Area and proceeds to Brattleboro Memorial Hospital with a plant Radiation Protection Technician on board to assist the crew.

#### Simulated actions

The plant Protected Area and a Radiological Controlled Area will be simulated. Response by Security personnel will be simulated by a Controller. A Controller will call 911 or notify Rescue to start and actually contact hospital staff for the Control Room.

#### Actual Response

The on-site Medical Response Team and Radiation Protection Technician secure the area and initiate first aid medical care and contamination control measures.

The medical response team is expected to cut away the anti-contamination clothing  
E Plan Shared/ Drills / Hospital & MS-1 Drills / 2015

as necessary and attempt to stabilize the patient.

The ambulance crew will report to the facility, package the patient for transport, load them onto the ambulance, and transport them to Brattleboro Memorial Hospital following turnover from site personnel. The patient will be met at the entrance to the hospital Emergency Room by Emergency Room personnel and Nuclear Medicine technicians who will provide contamination control measures for the ambulance and staff members. The Emergency Room will assess the patient's condition, perform appropriate medical procedures, and control the decontamination process.

Time Line/Detailed Sequence of Events - All times provided below are approximate.

Elapsed Time	Event	Message Card
00:00	Call to 911 or a Simulated Dispatch Center by Vermont Yankee	1
00:02	Call to Brattleboro Memorial Hospital by Vermont Yankee	2
00:03	Rescue, Inc. notified of the situation by the Dispatch Center	
00:05	Medical Response Team and Radiation Protection Technician arrive	3
00:10	Medical Response Team and Radiation Protection Technician assess patient	4, 5, & 6
00:15	Ambulance arrives at simulated work site.	
00:17	Medical Response Team gives initial patient information to ambulance crew	4 & 5
00:20	Radiation Protection Technician gives patient radiation readings to ambulance crew	6
00:25	Ambulance crew prepares patient for transport	
00:50	Ambulance departs for Brattleboro Memorial Hospital	
00:55	Ambulance crew transmits patient's vital signs to Brattleboro Memorial Hospital	7
00:58	Discussion about patient oil contamination with Brattleboro Memorial Hospital	8
01:00	Ambulance arrives and turns patient over to Brattleboro Memorial Hospital	
01:05	Patient responds to treatment initiated	
01:08	Emergency Room staff members begin treatment of hand injury	9
01:10	Ambulance and ambulance staff checked for contamination	10
01:20	Ambulance and ambulance staff decontaminated as necessary	
01:50	Emergency Room staff members begin disrobing demonstration	
01:55	Nuclear Medicine Technicians check staff for contamination	11
02:00	Hospital staff members describe how Emergency Room will be returned to normal	
02:15	Critique	

(  
(  
5. Special Hazards and Safety Precautions

Drill participants shall use "This is a drill." both before and after all radio communication. On-site personnel will take all normal safety precautions consistent with the Vermont Yankee Safety Manual.

6.0 Special Instructions to Controllers

A real emergency takes precedence over the drill. Should a real emergency occur, consult with ambulance and hospital supervision prior to stopping the drill. Discuss the situation with the Lead Drill Controller. 911 *is not participating*. Calls to 911 will be simulated

7.1 Extent of Play and Procedures to be tested

The objective is to evaluate the hospital response to a simulated contaminated individual.

Brattleboro Memorial Hospital will demonstrate the following, FEMA criterions 6.d.1 and 1.b.1, in accordance with procedures.

- (
- Implementation of the Brattleboro Memorial Hospital Radiological Contaminated Casualty Protocol
  - Simulated communication with 911 or communication with Brattleboro Central Dispatch, the simulated Vermont Yankee Nuclear Power Station Control Room, and the ambulance regarding the patient's medical condition, extent of contamination, treatment, and transport decisions
  - Receive a patient from the ambulance
  - Survey of ambulance staff and the ambulance prior to release
  - Contamination control in the Emergency Room during patient diagnosis and treatment
  - Use of personal dosimeters
  - Decontamination of the patient
  - Gowning and de-gowning
  - Restoration of the Emergency Room to normal operation
- (

( 8.0 Off-site FEMA Criterion (6.d.1) to be demonstrated

1. Brattleboro Memorial Hospital & Rescue INC Ambulance Service
  - 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/FEMA-REP-1, F.2; H.10; K.5.a, b; L.1,4)

This information is to be treated as CONFIDENTIAL until the drill is conducted.

Brattleboro Memorial Hospital  
Medical and MS-1 Drill

1.0 INTRODUCTION

This document contains the drill package for the Brattleboro Memorial Hospital MS-1 Drill scheduled for September 23, 2015. This drill was developed to assess the response of Vermont Yankee, Rescue, Inc., and Brattleboro Memorial Hospital personnel to a medical emergency involving a simulated contaminated injured person.

2.1 PARTICIPANTS

The following agencies are participating in the drill to some extent.

- Vermont Yankee Emergency Response Organization
- Vermont Yankee On-site Medical Team
- Rescue, Inc.
- Brattleboro Memorial Hospital

Drill participants shall use the phrase "THIS IS A DRILL" before and after all radio communication. On-site personnel will take all normal safety precautions consistent with the Vermont Yankee Safety Manual.

3.0 List of Controllers

Name	<u>Controller / Evaluator</u>	<u>Assigned Area</u>
TBD	Controller	Brattleboro Memorial Hospital
Brian Richardson	Controller	Brattleboro Memorial Hospital
Mark Considine	Controller	Ambulance Crew & Brattleboro Memorial Hospital
Mark Gilmore	Lead Controller	Brattleboro Memorial Hospital
John Angil	Controller	Outside Gate 1 & Brattleboro Memorial Hospital
Roy Ramsdell	Controller	Medical Response Team

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#### 4.0 Initial Conditions

The reactor is operating at 0% power. Plant operators are performing their normal duties. All proper radiation protection practices are being observed. Weather conditions will be as observed by the participants.

#### Narrative Summary

Note: All technical data on the incident is contained in the Message cards.

A plant worker is working on removed RHR Check Valve Bonnet using a Hy-Torque to remove the bolts in the hot machine shop. The worker tells his co-worker, who is holding the pump during the work being performed, that he is ready to start the removal process. A short time later, the hydraulic line falls spay the worker form the waist down with hydraulic oil and jamming the his hand between the tool and the bonnet. The co-worker is able to remove the tool from the bolt freeing the trapped hand. However the individual has a laceration of his left hand, with pain to the same arm and he the hand becomes contaminated when he was jammed by equipment. The co-worker notifies the Control Room of the incident. The on-site medical response team and a Radiation Protection technician respond to the situation.

Rescue, Inc. ambulance personnel arrive, assist in establishing vital signs and packaging the patient if necessary, then transport the individual to Brattleboro Memorial Hospital. A Radiation Protection technician will exercise contamination control measures during the process of patient packaging, pickup, and transport to the waiting ambulance.

The ambulance from Rescue, Inc. exits the simulated Protected Area and proceeds to Brattleboro Memorial Hospital with a plant Radiation Protection Technician on board to assist the crew.

#### Simulated actions

The plant Protected Area and a Radiological Controlled Area will be simulated. Response by Security personnel will be simulated by a Controller. A Controller will call 911 or notify Rescue to start and actually contact hospital staff for the Control Room.

#### Actual Response

The on-site Medical Response Team and Radiation Protection Technician secure the area and initiate first aid medical care and contamination control measures.

The medical response team is expected to cut away the anti-contamination clothing as necessary and attempt to stabilize the patient.

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The ambulance crew will report to the facility, package the patient for transport, load them onto the ambulance, and transport them to Brattleboro Memorial Hospital following turnover from site personnel. The patient will be met at the entrance to the hospital Emergency Room by Emergency Room personnel and Nuclear Medicine technicians who will provide contamination control measures for the ambulance and staff members. The Emergency Room will assess the patient's condition, perform appropriate medical procedures, and control the decontamination process.

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01:05	Patient responds to treatment initiated	
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01:10	Ambulance and ambulance staff checked for contamination	10
01:20	Ambulance and ambulance staff decontaminated as necessary	
01:50	Emergency Room staff members begin disrobing demonstration	
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02:00	Hospital staff members describe how Emergency Room will be returned to normal	
02:15	Critique	

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5. Special Hazards and Safety Precautions

Drill participants shall use "This is a drill." both before and after all radio communication. On-site personnel will take all normal safety precautions consistent with the Vermont Yankee Safety Manual.

6.0 Special Instructions to Controllers

A real emergency takes precedence over the drill. Should a real emergency occur, consult with ambulance and hospital supervision prior to stopping the drill. Discuss the situation with the Lead Drill Controller. 911 *is not participating*. Calls to 911 will be simulated

7.1 Extent of Play and Procedures to be tested

The objective is to evaluate the hospital response to a simulated contaminated individual.

Brattleboro Memorial Hospital will demonstrate the following, FEMA criterions 6.d.1 and 1.b.1, in accordance with procedures.

- Implementation of the Brattleboro Memorial Hospital Radiological Contaminated Casualty Protocol
- Simulated communication with 911 or communication with Brattleboro Central Dispatch, the simulated Vermont Yankee Nuclear Power Station Control Room, and the ambulance regarding the patient's medical condition, extent of contamination, treatment, and transport decisions
- Receive a patient from the ambulance
- Survey of ambulance staff and the ambulance prior to release
- Contamination control in the Emergency Room during patient diagnosis and treatment
- Use of personal dosimeters
- Decontamination of the patient
- Gowning and de-gowning
- Restoration of the Emergency Room to normal operation

This information is to be treated as CONFIDENTIAL until the drill is conducted.

8.0 Off-site FEMA Criterion (6.d.1 & 1.b.1) to be demonstrated

1. Brattleboro Memorial Hospital & Rescue INC Ambulance Service
  - 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/FEMA-REP-1, F.2; H.10; K.5.a, b; L.1,4)
2. Brattleboro Memorial Hospital
  - Criterion 1.b.1 – Facilities are sufficient to support emergency response. (NUREG-0654/FEMA-REP-1, H.3; G.3.a; J.10.h; J.12; K.5.b)

9.1 Pre-Drill Notification of Off-Site Agencies

- a. Brattleboro Memorial Hospital Initial MEG  
  
Person Contacted: Brian Richardson Date 8/13/2015  
  
Degree of participation: Care of contaminated and injured patient.
- b. Rescue Inc. Initial MEG  
  
Person Contacted: Drew Hazelton Date 8/13/2015  
  
Degree of participation: Full
- c. FEMA Initial MEG  
  
Persons Contacted: Robert Swartz and Ryan Jones Date 8/13/2015  
  
Degree of participation: Evaluation of exercise
- d. VEM Initial MEG  
  
Person Contacted: Glenn Herrin Date 8/13/2015  
  
Degree of participation: Controller- John Angil

This information is to be treated as CONFIDENTIAL until the drill is conducted.

( 10.0 Pre-Drill Notification of On-Site Personnel (Drill will be off-site)

- a. Director of Public Affairs Initial MEG  
Person Contacted: Marty Cohn Date 8/17/2015
- b. Medical Response Team Initial MEG  
Person Contacted: Roy Ramsdell Date 8/12/2015
- b. Radiation Protection Manager (designee) Initial MEG  
Person Contacted: Michael Pletcher Date 8/17/2015
- c. Acting Manager of Operations Initial MEG  
Person Contacted: Edward Harms: Date 8/17/2015
- d. Security Manager Initial MEG  
Person Contacted: Brian Copperthite: Date 8/17/2015
- e. NRC Resident Inspector Initial MEG  
Person Contacted: Date
- f. Plant Facility Manager Initial MEG  
Person Contacted: Corey Daniels Date 8/17/2015

This information is to be treated as CONFIDENTIAL until the drill is conducted.

( 11.0 Message Cards

The following message cards will be disseminated by Drill Controllers during the drill.

This information is to be treated as CONFIDENTIAL until the drill is conducted.

## Message Card

FROM: Lead Controller MESSAGE NO: 1  
TO: 911 or Dispatch Center CLOCK TIME: 08:00  
LOCATION: Simulated Control Room SCENARIO TIME: 00:00

### THIS IS A DRILL

The Lead Controller will call the Ambulance Controller read the message below as the "Dispatch Center".

"This is a drill."

"This is the Vermont Yankee Nuclear Power Station in Vernon, Vermont. We have a subject complaining of pain from a laceration of the hand at the site the laceration. There has been contamination, minor radiation levels and hydraulic oil, radiation levels will be provided to the unit en route. There is a single patient. We have no further details."

"This is a drill."

If asked for additional information from the Dispatch Center, provide the following.

"The patient is alert and oriented but complaining of a sudden onset of terrible pain of the hand. There is no known history of cardiac problems. Security will lead the ambulance into the site. Blood loss is minimal and bleeding has been controlled by direct pressure."

### CONTROLLER NOTE

The Control Room and Southwest Mutual Aid are not participating. The Controller must provide their name and telephone number as a point of contact so no calls go to the Control Room.

Name: \_\_\_\_\_

Call back telephone number: \_\_\_\_\_

This information is to be treated as CONFIDENTIAL until the drill is conducted.

## Message Card

FROM: Lead Controller MESSAGE NO: 2  
TO: Brattleboro Memorial Hospital CLOCK TIME: 08:02  
LOCATION: Simulated Control Room SCENARIO TIME: 00:02

### THIS IS A DRILL

A Controller will call the hospital at (802) 257-8222 and read the message below. Tell the player that 911 and the Control Room are not participating. Provide your name and a telephone number as a point of contact for any questions or follow-up.

"This is a drill."

"This is the Vermont Yankee Nuclear Power Station in Vernon, Vermont. We have an injured and contaminated subject who will be transported by Rescue, Inc. He is the only patient. He has pain and a contaminated laceration to the hand. Information pertaining to the extent of contamination will be provided by the Radiation Protection technician during transport."

"This is a drill."

If asked for additional information about the contamination, provide the following.

"The contamination is from Manganese-56 and Iron-54."

### CONTROLLER NOTE

The Control Room is not participating. The Controller must provide Brattleboro Memorial Hospital with their name and telephone number as a point of contact so no calls go to the Control Room.

Name: \_\_\_\_\_

Call back telephone number: \_\_\_\_\_

This information is to be treated as CONFIDENTIAL until the drill is conducted.

**Message Card**

FROM: On Scene Controller

MESSAGE NO: 3 —

TO: Medical Response Team

CLOCK TIME: -08:05

LOCATION: Simulated Hot Machine Shop

SCENARIO TIME: -00:05

THIS IS A DRILL

The controller will read the message below.

"This is a drill.

"The patient is experiencing pain of 10 on a 0 to 10 scale, and has a contaminated laceration on his hand with the bleeding controlled."

"This is a drill."

This information is to be treated as CONFIDENTIAL until the drill is conducted.

## Message Card

FROM: On Scene Controller MESSAGE NO: 4..  
TO: Medical Response Team or Ambulance Crew CLOCK TIME: -08:10  
LOCATION: Simulated Hot Machine Shop SCENARIO TIME: -00:10

### THIS IS A DRILL

The controller will provide the information below.

Chief Complaint: Arm and hand pain and some dizziness while standing.

History: A plant worker is working on removed RHR Check Valve Bonnet using a Hy-Torque to remove the bolts in the hot machine shop. The worker tells his co-worker, who is holding the pump during the work being performed, that he is ready to start the removal process. A short time later, the hydraulic line falls spray the worker from the waist down with hydraulic oil and jamming the his hand between the tool and the bonnet. The co-worker is able to remove the tool from the bolt freeing the trapped hand. However the individual has a laceration of his left hand, with pain to the same arm and he the hand becomes contaminated when he was jammed by equipment. The co-worker notifies the Control Room of the incident. The on-site medical response team and a Radiation Protection technician respond to the situation

Allergies: NKDA

Medications: vitamins

pmhx: HTN

Last oral intake: orange juice and a bagel sandwich for breakfast 1 hour ago.

This information is to be treated as CONFIDENTIAL until the drill is conducted.

**Message Card**

FROM: On Scene Controller

MESSAGE NO: ~~5~~

TO: Ambulance Crew

CLOCK TIME: -8:15

LOCATION: Ambulance

SCENARIO TIME: -00:15

**THIS IS A DRILL**

Vital Signs - All information must be earned by participants.

HR: 120 beats per minute

RR:20

BP: 135/90

spO2: 94%

EtCO2: if asked Normal (if requested)

glucose: if asked Normal (if *requested*)

EKG: If Done-a regular sinus rhythm

12 lead: give sample 12 lead (#1) if asked stays normal (if requested)

Lungs: clear all fields

This information is to be treated as CONFIDENTIAL until the drill is conducted.

**Message Card**

FROM: On Scene Controller MESSAGE NO: .....6

TO: Radiation Protection Technician CLOCK TIME: -08:15

LOCATION: Simulated Hot Machine Shop SCENARIO TIME: -00:15

**THIS IS A DRILL**

Provide this information to the team after the ambulance crew has entered the contaminated area. All information must be earned by participants.

**Survey Results**

Contamination: Area directly over Hand wound reads:

15 mr/hr (54,000 cpm) with an open window  
10 mr/hr (36,000 cpm) with the window closed

Area around the wound reads:

4 mr/hr (14,500 cpm) with an open window  
3 mr/hr (11,000 cpm) with the window closed

NOTE: Cpm is for the Radeye, HP-210 as well as the RM-14 and mr/hr is for the Radeye, CDV-700, Eberline E-520, HP-210, and Ludlum 14C.

This information is to be treated as CONFIDENTIAL until the drill is conducted.

**Message Card**

FROM: Ambulance Controller

MESSAGE NO: 7 —

TO: Ambulance Crew

CLOCK TIME: -8:55

LOCATION: Ambulance

SCENARIO TIME: -00:55

**THIS IS A DRILL**

The controller will provide the information below.

Appropriate Intervention:

02 (NRB), N (one or two),

Controller note Make sure that bleeding is controlled. they could discuss alternatives to direct pressure or discuss with the RPT how they could do it safely

Vital Signs - All information must be earned by participants.

HR: 120 bpm

RR: 20

BP: 130/94

spO2: 94%

etCO2: 40 mmHg (if requested)

This information is to be treated as CONFIDENTIAL until the drill is conducted.

**Message Card**

FROM: Hospital Controller

**MESSAGE NO: 8** —

TO: Hospital Emergency Team

CLOCK TIME: -8:58

LOCATION: Hospital

SCENARIO TIME: -00:58

**THIS IS A DRILL**

**Directions needed no BMH procedure for decon of oil.**

This information is to be treated as CONFIDENTIAL until the drill is conducted.

## Message Card

FROM: Hospital / Ambulance Controller MESSAGE NO: -9\_\_\_\_  
TO: Hospital Emergency Team CLOCK TIME: -9:08  
LOCATION: Brattleboro Memorial Hospital SCENARIO TIME: -01:08

### THIS IS A DRILL

All information must be earned by participants.

X-Ray results show no indication of broken bones or spinal injury.

#### Initial Survey Results

Contamination: Area directly over hand wound reads:  
15 mr/hr (54,000 cpm) with an open window  
10 mr/hr (36,000 cpm) with the window closed  
Area around the wound reads:  
4 mr/hr (14,500 cpm) with an open window  
3 mr/hr (11,000 cpm) with the window closed

#### Survey Results After First Decontamination Effort

Contamination: Area directly over hand wound reads:  
4 mr/hr (14,500 cpm) with an open window  
3 mr/hr (11,000 cpm) with the window closed  
Area around the wound reads:  
1mr/hr (3,600 cpm) with an open window  
0.75 mr/hr (2,700 cpm) with the window closed

#### Survey Results After Second Decontamination Effort

Contamination: Less than 0.1 mr/hr (300 cpm) with an open window  
Less than 0.1 mr/hr (300 cpm) with the window closed

NOTE: The cpm is for the Radeye, HP-210 as well as the RM-14 and mr/hr is for the Radeye, CDV-700, Eberline E-520, HP-210, and Ludlum 14C.

This information is to be treated as CONFIDENTIAL until the drill is conducted.

## Message Card

FROM: Ambulance Controller MESSAGE NO: "10"  
TO: Individuals Surveying the Ambulance CLOCK TIME: -9:10  
LOCATION: Brattleboro Memorial Hospital SCENARIO TIME: -01:10

### THIS IS A DRILL

After the ambulance delivers the patient to Brattleboro Memorial Hospital, the ambulance, crew, and ambulance loading bay area have to be monitored and decontaminated if necessary prior to release by the hospital. All information must be earned by participants.

#### Survey Results

Ambulance driver cab: Background on all instruments

Ambulance External Surface & Wheel wells: Background on all instruments

Ambulance patient area all surfaces: Background on all instruments

Ambulance driver: Background on all instruments

Ambulance crew: Background on all instruments

Ambulance loading dock area: Background on all instruments

If during the drill, parts of the ambulance or persons would have become contaminated because of actions by the ambulance crew, the controller should provide the following contamination levels.

2.0 mr/hr (7,200 cpm) with an open window

1.5 mr/hr (5,400 cpm) with the window closed

NOTE: Cpm is for the Radeye, HP-210 as well as the RM-14 and mrlhr is for the Radeye, CDV-700, Eberline E-520, HP-210, and Ludlum 14C.

This information is to be treated as CONFIDENTIAL until the drill is conducted.

**Message Card**

FROM: Hospital Controller

MESSAGE NO: 11 –

TO: Hospital Emergency Team

CLOCK TIME: -9:55

LOCATION: Brattleboro Memorial Hospital

SCENARIO TIME: -01:55

**THIS IS A DRILL**

If an individual would have become contaminated because of their actions, the controller should provide the following contamination levels. All information must be earned by participants.

Affected Area of the Body: 500 cpm

If an individual did not contaminate themselves, the controller should provide the following contamination levels. All information must be earned by participants.

Entire Body: Background on all instruments

This information is to be treated as CONFIDENTIAL until the drill is conducted.

## **Message Card**