U.S. Department of Homeland Security
99 High Street, 5th floor
Boston, MA 02110

FEMA

August 31, 2004

Albert Lewis, Director
Vermont Emergency Management Agency
Deptment of Public Safety
Waterbury State Complex
103 S. Main Street
Waterbury, VT 05671

Dear Director Lewis:

In compliance with NUREG-0654, FEMA REP-1, Rev. 1 and FEMA Guidance Memorandum MS-1, Region I staff evaluated a Medical Support MS-1 Drill involving offsite response to a simulated, contaminated injured individual, ambulance transport and treatment of the individual.

Enclosed is a copy of the final report for the July 22, 2004, Medical Support MS-1 Drill of the offsite radiological emergency plans for Vermont Yankee Nuclear Power Station in Brattleboro, Vermont. This report addresses the evaluation of the plans and preparedness for the State of Vermont, Brattleboro Memorial Hospital and Rescue Inc. Ambulance Service. The final exercise report was prepared by the Federal Emergency Management Agency Region I staff.

No Deficiencies were identified during the July 22, 2004 drill. There were six Areas Requiring Corrective Action (ARCA) identified. They will be addressed through regularly scheduled training sessions.

If you have any questions, please contact Deborah S. Bell, RAC Chair at 617-832-4744 or Deborah.Bell@DHS.GOV.

Sincerely,

Kenneth L. Horak
Acting Regional Director

Enclosure

CC: Lew Stowell and Steve Goldsmith, VEMA
Karen Crampton, VT DPH
Lori Tcaczyk, ENTERGY
Robert Bores, NRC
Pat Tenorio, FEMA

Vermont Yankee Nuclear Power Station

MS-1 Drill – Brattleboro Memorial Hospital, Brattleboro, Vermont

Licensee: Entergy – Vermont Yankee

Exercise Date: July 22, 2004

Report Date: August 31, 2004

FEMA

DEPARTMENT OF HOMELAND SECURITY
EMERGENCY PREPAREDNESS AND RESPONSE
FEDERAL EMERGENCY MANAGEMENT AGENCY
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Brattleboro Memorial Hospital Drill

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I. EXECUTIVE SUMMARY

On July 22, 2004, an MS-1 Drill was conducted with Rescue Inc. Ambulance Company and Brattleboro Memorial Hospital in Brattleboro, Vermont. The purpose of this drill was to assess the capability of Brattleboro Memorial Hospital and Rescue Inc., to respond to a radiological incident involving the Vermont Yankee Nuclear Power Station. This drill was held in accordance with FEMA's policies and guidance concerning the exercise of State and local radiological emergency response plans (RERP) and procedures.

FEMA wishes to acknowledge the efforts of the many individuals who participated in this drill. Protecting the public health and safety is the full-time job of some of the drill participants and an additional assigned responsibility for others. This report contains the final evaluation of the Brattleboro Memorial Hospital MS-1 Drill.

Brattleboro Memorial Hospital and Rescue Inc. Ambulance Company personnel demonstrated some knowledge of their emergency response plans and procedures. There were no deficiencies and six areas requiring corrective action (ARCA) identified as a result of this drill.

II. INTRODUCTION

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

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

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

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

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

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

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

An MS-1 Evaluated Drill was conducted on July 22, 2004, by DHS-FEMA Region I, Radiological Emergency Preparedness Program (REP) Staff to assess the capabilities of Brattleboro Memorial Hospital staff and Rescue Inc. Ambulance Company staff, to demonstrate the adequacy of procedures, facilities, equipment, and personnel for the radiological monitoring and decontamination of injured individuals as a result of a Vermont Yankee Nuclear Power Station incident. 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 by the FEMA Region I RAC Chairperson, and approved by the Regional Director.

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

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

- "Radiological Emergency Preparedness: Exercise Evaluation Methodology," published in the Federal Register on September 12, 2001, and amended April 25, 2002.

Section III of this report, entitled "Drill Evaluation and Results," presents information on the demonstration of applicable exercise criteria at Brattleboro Memorial Hospital and Rescue, Inc. in an issues-only format. This section also contains, if applicable: (1) descriptions of all Deficiencies and Areas Requiring Corrective Action (ARCA) assessed during this exercise, recommended corrective actions, and (2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the OROs' efforts to resolve them.

III. DRILL EVALUATION AND RESULTS

Participating Agencies:
Brattleboro Memorial Hospital
Rescue Inc. Ambulance Company

The following participated, but were not evaluated by FEMA:
Brattleboro Central Dispatch (911), Brattleboro
Rockingham 911, State of Vermont Department of Emergency Management
Entergy Nuclear Vermont Yankee

Contained in this section are the results and findings of the evaluation of the Brattleboro, Vermont, MS-1 Brattleboro Memorial Hospital Drill conducted on July 22, 2004. The purpose of this evaluated drill was to test the readiness capabilities of Brattleboro Memorial Hospital and Rescue Inc. Ambulance Company to be able to respond to an incident involving injured, contaminated individuals.

Each functional entity was evaluated on the basis of its demonstration of criteria delineated in the exercise criterion contained in the "Radiological Emergency Preparedness: Exercise Evaluation Methodology," published in the Federal Register on September 12, 2001, and amended April 25, 2002.

The following is the status of functional entities evaluated.

A. Rescue Inc. Ambulance Company

The Rescue Inc. Ambulance Crew clearly demonstrated knowledge of radiation and potential for cross contamination. Upon notification, they immediately responded to the incident and ensured proper emergency response measures were taken. The crew worked expeditiously to ensure care and safety of the patient.

(a) MET: Criterion 3.a.1. Criterion 6.d.1

(b) DEFICIENCES: NONE

(c) AREAS REQUIRING CORRECTIVE ACTION (ARCA): NONE

(d) NOT DEMONSTRATED: NONE

(e) PRIOR ARCAs RESOLVED: NONE

(f) PRIOR ARCAs UNRESOLVED: NONE

B. Brattleboro Memorial Hospital

The hospital maintenance and housekeeping staff performed very well. They set up the Radiological Emergency Area (REA) Treatment Room quickly and removed excess equipment while covering the floor with herculite to aid in the prevention of cross-contamination.

(a) MET: NONE

(b) DEFICIENCES: NONE

(c) AREAS REQUIRING CORRECTIVE ACTION: 3.a.1, 6.d.1

ISSUE #: 67-04-3.a.1-A-1

Condition: The Buffer Zone Nurse assigned to perform for this demonstration had no prior training in assigned duties. She was unsure of the proper dosimeter documentation procedures. This resulted in improper implementation of the dosimeter documentation procedures. The 0-500mr direct reading dosimeters (DRD) were not charged to zero prior to issue and no instructions were given to read their DRD every 30 minutes, as prescribed by the hospital plan.

Possible Cause: No training of the Buffer Zone Nurse prior to the demonstration.

Reference: Brattleboro Memorial Hospital Plan, Annex D.

Effect: By not reviewing the plan and following the procedures the staff did not provide complete support of the emergency situation and could have affected the health and safety of the patient.

Recommendation: Training of the position responsibilities should be conducted to ensure proper treatment and handling of a potentially contaminated, injured patient.

ISSUE #: 67-04-6.d.1-A-2

Condition: Once the injured patient was in the REA treatment room only two people, one doctor and one nurse, attended the patient. Several other staff members were available outside the treatment room, but were not utilized. Additional staff could have aided the transfer of the patient from the first decontamination tub to the second and prevented the punctured leg of the patient from being dropped during the transfer. The use of a dummy rather than a person simulating injury may also have influenced their decisions.

Possible Cause: Training of hospital staff had not taken place for personnel that might respond to a radiologically contaminated patient.

Reference: Brattleboro Memorial Hospital Plan, Annex D.

Effect: Further injury could have occurred to the patient during the transfer from the first contaminated gurney to the second uncontaminated gurney because of the type of injuries to the patient. The plan recommends at least two personnel with the doctor for assistance. If the plan had been observed, the transfer of the patient would have been successful.

Recommendation: Training of the hospital staff with responsibilities within the REA should be conducted to aid teamwork and handling a potentially contaminated and injured patient. The use of a person simulating injuries would have aided in the realism of the demonstration.

ISSUE # 67-04-6d.1-A-3

Condition: A current plan was available in the Emergency Room office, but not used during the demonstration. The policies established by the plan were not followed.

Possible Cause: Training of hospital staff had not taken place for personnel that might respond to radiologically contaminated patient.

Reference: Brattleboro Memorial Hospital Plan, Annex D.

Effect: This did not allow for adequate care to ensure the health and safety of the contaminated injured patient.

Recommendation: Training of the participating staff in the use of the hospital plan would enhance performance of the staff. As described in the Plan, the appropriate number of staff would have assisted the doctor within the treatment room, a nurse would have assumed the reporting and documentation of the monitoring of the patient and assistance to the doctor would have been much easier.

ISSUE #: 67-04-6.D.1-A-4

Condition: The personnel monitoring/decontamination form was not completed.

Possible Cause: Because there were no additional staffs in the REA treatment room, no one could complete the form.

Reference: Brattleboro Memorial Hospital Plan, Annex D.

Effect: After the decontamination efforts of the nurse were completed, there was no information to refer to by the attending staff to determine if contamination levels were being reduced.

Recommendation: Training of the participating staff in the use of the hospital plan would enhance performance of the staff.

ISSUE #: 67-04-6.D.1-A-5
Condition: A radiological background measurement of the treatment room was not attempted during the demonstration.

Possible Cause: Training of hospital staff had not taken place for personnel that might respond to radiologically contaminated patient.

Reference: Brattleboro Memorial Hospital Plan, Annex D.

Effect: The attending staff could not tell if decontamination attempts were reducing contamination levels.

Recommendation: Training of the participating staff with responsibilities within the REA should be conducted to aid in the treatment and handling of a potentially contaminated, injured patient.

ISSUE #: 67-04-6.D.1-A-6

Condition: No one led the response effort in the REA. No staff person was available to ensure that the hospital plan and procedures were followed. No one was sure who should have been in charge of the treatment room and the processing of the contaminated injured patient.

Possible Cause: Training of hospital staff had not taken place for personnel that might respond to a radiologically contaminated patient.

Reference: Brattleboro Memorial Hospital Plan, Annex D.

Effect: This caused confusion among staff and did not allow for adequate care to ensure the health and safety of the contaminated injured patient.

Recommendation: Training of the staff with responsibilities within the REA should be conducted to aid the teamwork of those assigned the treatment and handling of a potentially contaminated, injured patient.

(d) NOT DEMONSTRATED: NONE

(e) PRIOR ARCAs RESOLVED: NONE

(f) PRIOR ARCAs UNRESOLVED: NONE

APPENDIX 1

DRILL EVALUATORS

The following is a list of the personnel who evaluated the Medical Services Drill (MS-1) for the Vermont Yankee Nuclear Power Station on July 22, 2004.

EVALUATION SITE	CRITERION	EVALUATOR	ORGANIZATION
Rescue Inc.	6.d.1. - Transportation And Treatment of Contaminated Injured Individuals	Lauren K. DeMarco	FEMA Region I
	3.a.1-- Implementation of Emergency Worker Exposure Control		
Brattleboro Memorial Hospital	6.d.1 - Transportation And Treatment of Contaminated Injured Individuals	Robert Poole	FEMA Region I

APPENDIX 2

EXTENT OF PLAY

BRATTLEBORO MEMORIAL HOSPITAL MEDICAL DRILL, BRATTLEBORO, VERMONT

The extent of play for the Brattleboro Memorial Hospital medical drill is provided below. Three FEMA evaluation criteria will be demonstrated.
Participants in the drill are:

- **Brattleboro Memorial Hospital,**
- **Rescue Inc. (ambulance service)**
- **Brattleboro Central Dispatch (911), Brattleboro**
- **Rockingham 911, State of Vermont Department of Emergency Management**
- **Entergy Nuclear Vermont Yankee.**

NOTE: Onsite participation in the MS-1 drill can change subject to plant conditions at that time.
Criterion 3.a.1: The ORO 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
ORO 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. ORO 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 (for example, 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, for example, 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.

Scenario Specific Extent of Play

Rescue Inc:

The issue of dosimeters and radiological briefing part of the demonstration will be done out of sequence by the ambulance company Rescue Inc prior to the start of the drill. This can be done while in transit to the site in accordance with the Rescue Inc procedures.
In this scenario dosimeters will be issued at the VYNPS site to the ambulance crew as they enter Gate 2 and proceed to the incident staging area. These dosimeters will be retrieved from the ambulance crew when they exit from Gate 2.
The ambulance (Rescue Inc) will follow Rescue Inc and the State of Vermont procedures for use of dosimeters and exposure control. They will wear a direct reading dosimeter (DRD) and a permanent reading dosimeter (TLD). A dosimeter charger will be available for demonstration.

Brattleboro Memorial Hospital:

The Brattleboro Memorial Hospital staff will follow the Hospital Plan for the use of direct reading dosimeters and permanent reading dosimeters (TLD). They will use the low range DRD and TLD supplied by the Vermont Yankee Nuclear Power Station. The VYNPS quarterly surveillance sheet for these dosimeters will be available. Exposure limits are specified in the Hospital Plan.

A separate set of DRD and TLD supplied by the State of Vermont is available for use. The paperwork supporting the calibration of the TLD and leak testing of the direct reading dosimeters supplied by the State of Vermont are at the State of Vermont Offices in Waterbury, VT.

Both the ambulance crew and the hospital will be interviewed about their knowledge of dosimetry by the FEMA evaluators.

All participants will demonstrate knowledge of procedures for the use of the dosimeters and of the exposure limits.

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. ORO 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. ORO 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.

Scenario Specific Extent of Play

The use of potassium iodide (KI) is not required for this scenario. Demonstration of this criterion is only required once per 6 years.

This was demonstrated through discussion by the Rescue Inc and the Brattleboro Memorial Hospital in the 2002 MS-1 drill.

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

Extent of Play

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

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

Monitoring of the victim may be performed before transport, 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 before 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.

Scenario Specific Extent of Play

Vermont Yankee

The scenario will involve an injured and contaminated person from the Vermont Yankee Nuclear Power Station (VYNPS) in Vernon, VT.
The Control Room at VYNPS may participate in the FEMA portion of the drill to the extent of the notification of the Rockingham (911) and the Hospital. If not VYNPS Drill Controller will make the call.
The VYNPS Medical Response Team may participate in the FEMA evaluated portion of the drill to the extent of the turnover of the patient to the ambulance at the incident staging area that is inside VYNPS Gate 2.
VYNPS personnel will participate at the Hospital by providing assistance for radiological monitoring and contamination control.

VYNPS personnel will follow VY procedure OP-3508 on site and the Hospital Plan when at the Hospital.

All participants entering VYNPS Gate 1 will be subject to security checks.

Rockingham 911 and Brattleboro Dispatch

Rockingham 911 will receive the call from the VYNPS Control Room.
Brattleboro Central Dispatch (911) will participate in the initial communications with Rockingham 911 and the dispatch of the Rescue Inc. ambulance.

Rescue Inc (Ambulance service)

The Rescue Inc ambulance will be pre-staged at the VYNPS parking lot inside Gate 1. They will receive the dispatch call and then proceed to the incident staging area inside Gate 2. Dosimetry issue and gowning as required by procedure will be pre-staged.

The ambulance from Rescue Inc will receive the patient in the incident staging area inside VYNPS plant Gate 2. Vital signs and other information will be provided to them.

Personnel from the VYNPS will conduct the radiological monitoring of the patient at the incident staging area and in the ambulance.

If necessary, Rescue Inc will package the patient to contain contamination. Rescue Inc will wear dosimeters and protective clothing as appropriate, in accordance with the Rescue Inc procedures and the State of VT plan and procedures. Rescue Inc will demonstrate appropriate handling of a contaminated and injured patient during transport and during the hand over of the patient to the Brattleboro Hospital Emergency Room receiving team.

The monitoring of the ambulance and the ambulance crew prior to release from the hospital will be demonstrated by either VYNPS or Hospital Nuclear Medicine personnel.

One of the ambulance crew members will demonstrate removal of protective clothing and be monitored prior to release into clean areas.

Brattleboro Memorial Hospital

Brattleboro Memorial Hospital (BMH) Emergency Room personnel and the Maintenance Department will demonstrate the set up of the treatment area and decontamination area, and the Securing of the approach to this area.

The issue of dosimeters, briefing on exposure limits and gowning as appropriate will be demonstrated by the ER personnel.

The BMH Nuclear Medicine Specialists or VYNPS personnel will demonstrate radiological monitoring and contamination control in the BMH Emergency Room.

In the ER, the BMH ER doctor and ER nurses will demonstrate patient assessment and decontamination of one of the wounds. The ER personnel will demonstrate the collection of samples, swabs etc from the patient and transfer of samples to the clean areas for analyses.

BMH will describe how they would use X ray equipment in the decontamination area and maintain contamination control, if they do not actually demonstrate this.

BMH ER personnel will demonstrate transfer of the patient from the decontamination / treatment area to the clean area and then to the Operating Room (OR). The patient will be decontaminated to the extent possible in the ER and packaged for transfer to the OR.

At the end of the drill in the ER, one of the BMH Emergency Room staff members will demonstrate the removal of protective clothing and entry into clean areas. Final monitoring of personnel at the boundary of the decontamination area will be demonstrated by VYNPS personnel or the Hospital Nuclear Medicine Specialist.

A description only, of the cleanup of the decontamination / treatment areas in the ER and the disposal of potentially contaminated equipment and materials will be provided by the BMH Nuclear Medicine Specialist or the VYNPS Radiation Protection Specialist and the BMH Maintenance Department.

As an additional practice outside of evaluated drill play, the BMH OR will demonstrate treatment and contamination control in the OR. OR procedures on one of the contaminated wounds will be demonstrated. Radiological monitoring will be demonstrated by a Nuclear Medicine Specialist or by VYNPS personnel. Final release of the patient from the OR to a clean area will be demonstrated.

Re-demonstration

A re-demonstration of issues identified by the FEMA evaluator to the Drill Controller is allowed during the conduct of the drill. The conditions are that the issues are related to the adequacy of the demonstration of radiological monitoring of the patient, the adequacy of the demonstration of contamination control procedures used by the ambulance crew and hospital emergency room personnel, and the adequacy of the demonstration of the use of personal dosimeters and KI. The re-demonstration will be agreed to by the FEMA evaluator and will occur after a brief remedial training is provided by the drill controller or another qualified person. Any re-demonstration will be conducted after a session of training of the particular area identified as a problem. FEMA will not conduct training.

APPENDIX 3

Scenario

MEDICAL SERVICES DRILL SCENARIO

Brattleboro Memorial Hospital, Rescue Inc
Entergy Nuclear Vermont Yankee & State of Vermont
CONFIDENTIAL

JULY 22, 2004

MEDICAL DRILL PLANNING FORM

Type of Drill: Medical Drill MS-1 **Date of Drill:** July 22, 2004

Location of Drill:

- Vermont Yankee Nuclear Power Station, Vernon, VT.
- Brattleboro Memorial Hospital, Brattleboro, Vermont
- Rescue Inc Offices, Brattleboro, VT (out of sequence)

Participants:

- Brattleboro Memorial Hospital (BMH),
- Rescue Inc (ambulance),
- 911 Rockingham, State of Vermont Emergency Management
- Brattleboro Dispatch
- Entergy Nuclear Vermont Yankee Nuclear Power Station (VYNPS).

1. Description of Drill:

a. Initial Conditions

The reactor is operating at 100% power. Plant operators are performing duties. All proper radiation protection practices are being observed.

NOTE: Plant Participation depends on the plant conditions at the time.

b. Narrative Summary

The Control Room was notified by a mechanic of an accident in the contaminated maintenance shop area. The Control Room used the PA system to alert the on site Medical Response Team and Radiation Protection.

A mechanic working in the contaminated machine shop fell from the second floor (about 10 feet) and landed partially on the metal waste bin near the large lathe. The metal waste bin contains contaminated material.

The mechanic was not dressed in protective clothing. A large chunk of contaminated metal is impaled in his left calf. A number of small pieces of contaminated metal are stuck in his hands. All wounds are bleeding but not arterially. He has a number of contusions including a large bump on this head.

The Vermont Yankee Nuclear Power Station (VYNPS), Medical Response Team responded to the area and performed basic first aid. Station personnel removed the outer clothing (simulated) and prepare the injured person for transport. Because of the nature of the injuries the VYNPS Medical Response Team will not attempt to extract imbedded metal objects or decontaminate wounds.

Contamination levels on the injured person are in the Serious Category of severity as defined in the VYNPS procedure OP-3508 and in the BMH Hospital Plan.

The VYNPS Medical response team will back board the patient owing to concerns for c-spine. The patient will be placed on a stretcher for transport to the Brattleboro Memorial Hospital and moved to the Incident Staging Area, to await the ambulance from Rescue Inc. The incident staging area is planned to be located inside Gate 2.

The VYNPS Control Room will notify 911 and request an ambulance. The Control Room will also notify the BMH of the request for an ambulance and provide some general information on the accident.

Rescue Inc will transport the patient to the Brattleboro Memorial Hospital. As necessary the ambulance crew will provide patient care while en route to the hospital. A VYNPS Radiation Protection Technician will provide radiological monitoring and contamination control in the ambulance. The ambulance crew will maintain communications with the BMH while en route.

At the Brattleboro Memorial Hospital, Security will direct the ambulance to the loading dock and cordon off the area. The Emergency Room (ER) staff will receive the ambulance on the loading dock outside the Decontamination Room of the ER. A turnover will be received from the ambulance crew and the patient will be placed in the Hospital decontamination bed and wheeled into the ER.

The VYNPS RP Tech or a Hospital Nuclear Medicine Tech will demonstrate how the ambulance and loading dock area will be monitored for contamination prior to release. Through discussion one of the ambulance crew / VY RP Tech will describe what will happen if the ambulance crew was contaminated. If appropriate one of the ambulance crew will demonstrate de gowning at a step off pad location set up in the ambulance bay area.

In the ER the patient injuries and medical condition will be assessed. Swabs of orifices and wounds will be taken and transferred to the clean area for analyses by the Laboratory. A consultation with the Operation Room (OR) staff will ensue. The decision will be made to decontaminate and treat the wounds on the patient's hands and face, check for back injuries in the ER. Metal objects extracted from wounds will be bagged and tagged. The patient will then be transferred to a clean gurney for transport to the OR where the more serious wounds to his leg will be decontaminated and treated.

After the patient is transferred to the OR, one of the ER staff will demonstrate de gowning and monitoring prior to release into the clean area.

The ER staff, the VYNPS RP Tech and the Maintenance Department will discuss how the decontamination room will be monitored, cleaned up and restored to service.

The OR staff will demonstrate contamination control during surgery (simulated). Monitoring and release of the patient to clean areas will be demonstrated after surgery. Contaminated metal objects from wounds will be bagged and tagged.

c. Timeline of Events

All times provided below are approximate.

CLOCK TIME	SCENARIO TIME	EVENT	Messages
		Out of sequence Demonstration at Rescue Inc Radiological Briefing & State of VT dosimeter issue to ambulance crew at Rescue HQ or can be done in Ambulance in transit...	Ambulance Controller to ensure FEMA evaluator observes briefing
11:00		The ambulance leaves Rescue Inc for pre staging at the VYNPS site.	
1230		The ambulance is pre staged inside Gate 2	
1230	0000	**On Site Drill Starts** The call is made to the Control Room about the injured mechanic in the Maintenance Shop.	**Machine Shop Message #1**
1235	0005	Control Room makes PA announcement for Medical Response team and RP to respond to the scene.	**Control Room Message #1** may be issued at this time.
1240	0010	Medical response team & RP at the scene of the injury. Area is cordoned off and clean boundary established. Patient is assessed.	**Machine Shop Message #2.**
1240	0010	Lead Controller (or the Medical Response Team if participating) will call VYNPS Control Room to request an ambulance if this has not already been done by the Control Room.	**Machine Shop Message #3**
1240	0010	**Off Site Drill Starts** The Control Room will initiate the Drill by calling 911 and reporting the Accident (provide 911 and Rescue Inc with Lead Controller phone # to prevent further calls from going to the Control Room)	**Control Room Message # 1.** Lead Controller may do this if Control Room is unable to participate.
1255	0025	Ambulance is pre staged to be at the accident scene	

CLOCK TIME	SCENARIO TIME	EVENT	Messages
1300	0030	The Medical Response Team transfers the patient to the ambulance crew.	**Ambulance Message # 1**
1305	0035	Ambulance prepares to leave the Incident Staging area	
1310	0040	Ambulance en route to BMH. Provide ambulance with Vital Signs when halfway to BMH	**Ambulance Message # 2**
1320 to 13:30	0050 to 0100	Ambulance arrives at BMH and initiates turnover of patient to the ER Staff on the Loading dock	**ER Message #1**
1335	0105	ER begins patient assessment & treatment	**ER Message #2**
After 1350	after 0120	Monitoring of ambulance & ambulance crew prior to release. Final reading of dosimeters.	**Ambulance Message # 3**
1435	0205	ER releases patient to OR	
1450	0220	OR begins patient treatment	**OR Message #1**
1450	0220	ER demonstrates de gowning and monitoring of ER Staff prior to release to clean area. Final reading of dosimeters.	**ER Message #3**
1505	0235	ER describes cleanup process of Decontamination Room.	
1550	0320	OR drill ends	
1605	0335	Drill Termination	
1620 to 1720	0350 to 0450	Drill Critique	

2. Special Hazards and Safety Precautions

Prior and subsequent to all Communications all drill participants shall use the wording, **"This is a drill"**.

Consistent with the Vermont Yankee Safety Manual On-site personnel will take all normal safety precautions.

3. List of Controllers

Name	Title	Assigned Areas
Mike Empey	Lead Drill Controller	VY Machine Shop, BMH

TBD	Control Room Controller	VY Control Room
TBD	Machine Shop Controller	Incident Scene
TBD	Ambulance Controller	Rescue Inc, VY inside Gate 2, BMH
TBD	BMH ER Controller	BMH ER
TBD	BMH OR Controller	BMH OR

4. Special Instructions to Controllers

A real medical emergency takes precedence over the drill. Should a real medical emergency occur, follow the instructions of the ambulance and hospital supervision regarding continuation of the drill. Discuss this situation with the FEMA evaluator.

5. Procedures to be tested

Vermont Yankee Nuclear Power Station, Emergency Plan Implementing Procedures are not being evaluated by FEMA. OP-3508 will be used on site.

The Drill Controllers and FEMA will evaluate the implementation of the BMH Radiological Contaminated Casualty Protocol at the Hospital, and the Rescue Inc. procedures for the transportation of a contaminated and injured patient to BMH.

For an on site medical incident, VYNPS issues dosimeters and briefs the Rescue Inc ambulance crew at Gate 2 at the site. These dosimeters are retrieved at Gate 2 prior to the ambulance leaving. In order to demonstrate for FEMA, knowledge of the State of Vermont procedures, dosimeter issuance and a radiological briefing will be conducted, in accordance with the Rescue Inc procedures, out of sequence and prior to the start of the drill. This can be done in the ambulance while in transit to the site.

6. Off-site FEMA Criterion to be demonstrated

The drill will be evaluated by the Federal Emergency Management Agency (FEMA) in accordance with the FEMA New Exercise Evaluation Methodology, April, 2002. The Extent of Play for Criterion 3.a.1 and Criterion 6.d.1 was submitted on April 21, 2004 to FEMA.

7. Pre-Drill Notification of Off-Site Agencies:

a. **Brattleboro Memorial Hospital** **Initial_____**

Person Contacted: Joe Pimentel Date: April 20, 2004
Andy Hall & Carol Pacetti Date: April 20, 2004
Degree of participation: Care of contaminated and injured patient.

b. **Rescue Inc.** **Initial_____**

Person Contacted: Mark Considine Date: May 3, 2004

Degree of participation: Transport of contaminated and injured patient.

c. **FEMA** **Initial_____**

Person Contacted: Lauren DeMarco Date: April 20, 2004

d. **VT DEM** **Initial_____**

Person Contacted: Lew Stowell Date: April 20, 2004

8. **Pre-Drill Notification of On-Site Personnel**

a. **Director of Public Affairs** **Initial_____**

Person Contacted: Brian Cosgrove Date:

b. **Radiation Protection Manager** **Initial_____**

Person Contacted: John Geyster Date: TBD

c. **Operations Superintendent** **Initial_____**

Person Contacted: Chris Wamser Date: TBD

d. **Security Manager** **Initial_____**

Person Contacted: Patrick Ryan Date: TBD

e. **NRC Resident Insp.** **Initial_____**

Person Contacted: Dave Pelton or Beth Sienel Date: TBD

f. **Plant General Manger** **Initial-_____**

Person Contacted: Kevin Bronson Date: TBD