Federal Emergency Management Agency

Region I
J.W. McCormack Post Office &
Courthouse Building, Room 442
Boston, MA 02109

August 27, 2001

Hubert J. Miller, Regional Administrator
USNRC, Region I
475 Allendale Road
King of Prussia, PA 19406

Dear Mr. Miller:

Enclosed is a copy of the final report for the June 22, 2001, Saints Memorial Medical Center MS-1 Drill. This report addresses the evaluation of the plans and preparedness for the Commonwealth of Massachusetts and the Saints Memorial Medical Center. Saints Memorial Medical Center is a designated hospital for treatment of injured victims who are radiologically contaminated. The report also addresses the evaluation of the Emergency Medical Services (EMS) provided by Trinity Ambulance Service the contracted provider of EMS to the city of Lowell, Massachusetts. The final drill report was prepared by the Federal Emergency Management Agency, Region I staff. Copies of this report have been forwarded to the Commonwealth of Massachusetts.

There were no deficiencies identified during the June 22, 2001, drill. No Area Requiring Corrective Action (ARCA) was identified.

Based upon the results of the June 22, 2001, Massachusetts MS-1 Drill, the offsite radiological emergency response plans and preparedness for the Commonwealth of Massachusetts and Saints Memorial Medical Center, that are site specific to the Seabrook Nuclear Power Station, can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to protect the health and safety of the public in the event of a radiological emergency at the site.

If you should have any questions, please contact Daniel McElhinney, RAC Chair, at 617-223-9567.

Sincerely,

Kenneth L. Horak
Acting Regional Director

Enclosure:

MS-1 DRILL

SAINTS MEMORIAL MEDICAL CENTER
LOWELL, MASSACHUSETTS

SEABROOK NUCLEAR POWER STATION

Licensee:	***North Atlantic Energy Services Corporation***
Exercise Date:	***June 22, 2001***
Report Date:	***August 24, 2001***

FEDERAL EMERGENCY MANAGEMENT AGENCY
REGION 1
JOHN W. McCORMACK POST OFFICE AND COURTHOUSE
BOSTON, MASSACHUSETTS 02109

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I. EXECUTIVE SUMMARY

On June 22, 2001, a drill was conducted at the Saints Memorial Medical Center Lowell, Massachusetts. The drill was conducted by representatives of the Federal Emergency Management Agency (FEMA) Region I. The purpose of the drill was to assess the capability of the Saints Memorial Medical Center to respond to a radiological emergency associated with the Seabrook Nuclear Power Station (NPS). This drill was conducted 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 individuals of Trinity Ambulance Company who assisted with the transportation and care of the victim and the Saints Memorial Medical Center staff.

Protecting the public health and safety is the full-time job of some 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 community. Cooperation and teamwork of all the participants were evident during these exercises.

This report contains the final evaluations of the Medical Services –1 (MS-1) Drill.

The Emergency Medical Technicians and the staff of Saints Memorial Medical Center demonstrated knowledge and understanding of their emergency response plans and procedures and adequately implemented them.

II. INTRODUCTION

On December 7, 1979, the President directed FEMA to assume the lead responsibility for all 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.

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

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

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

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

- Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated June 17, 1993 (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's Regional Assistance Committee (RAC), which is chaired by FEMA.

Formal submission of the RERPs for the Seabrook Nuclear Power Station (NPS) to FEMA Region I by the Commonwealth of Massachusetts and their involved local jurisdictions occurred on September 1987 and May 1992.

A MS-1 Drill was conducted on June 22, 2001, by FEMA Region I to assess the capabilities of the City of Lowell Emergency Medical Services and the Saints Memorial Medical Center in implementing their RERPs and procedures. 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 evaluation team, with final determinations made by the FEMA Region I RAC Chairperson, and approved by the Regional Director.

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

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

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

- FEMA-REP-15, "Radiological Emergency Preparedness Exercise Evaluation Methodology," September 1991.

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, issue only format. This section also contains, if required, (1) descriptions of Deficiencies and ARCAs assessed during exercises, 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

Contained in this section are the results and findings of the evaluation of the Trinity Ambulance Service Emergency Medical Services and the Saints Memorial Medical Center MS-1 Drill to test the medical services capabilities to respond to an incident involving a radiologically contaminated injured victim. Each functional entity was evaluated on the basis of its demonstration of criteria delineated in the Exercise objectives contained in FEMA-REP-14, REP Manual, September, 1991.

The following is the status of functional entities evaluated.

1a. Trinity Ambulance Emergency Medical Services Unit

The two Emergency Medical Technicians (EMT) staffing the Trinity ambulance, the contractual EMS provider in the City of Lowell, were professional and knowledgeable. Exhibiting good teamwork and coordination, they received the victim and carefully handled the patient to control contamination and not exacerbate the victim's injuries. The hospital was informed of the situation by the EMTs who provided patient vital signs and estimated time of arrival. The EMTs performed patient transfer with care and efficiency at the Emergency Room entrance to the hospital.

a. **MET:** Objective 20

b. **DEFICIENCY:** None

c. **AREA REQUIRING CORRECTIVE ACTIONS:** None

d. **NOT DEMONSTRATED:** None

e. **PRIOR ARCAs – RESOLVED:** None

f. **PRIOR ARCAs – UNRESOLVED:** None

1b. Saints Memorial Medical Center Lowell, Massachusetts

The Radiological Emergency Area (REA) team and the Radiation Safety Officer (RSO) demonstrated their knowledge, expertise, and abilities. They, along with security, maintenance and housekeeping personnel worked well as a team to minimize the spreading of contamination and provide quick and efficient medical care to the simulated victim. They showed a sincere concern and care for the patient. There was sufficient medical, administrative, and logistical support to properly care for a radiologically contaminated injured person.

Special note was made of the "Circulating Nurse." She coordinated medical care, decontamination and monitoring of the victim with an exceptionally high degree of professionalism and supervised recovery actions of the hospital staff.

a. MET: Objective 21

b. DEFICIENCY: None

c. AREAS REQUIRING CORRECTIVE ACTIONS: None

d. NOT DEMONSTRATED: None

e. PRIOR ARCAs – RESOLVED: None

f. PRIOR ARCAs – UNRESOLVED: None

APPENDIX I

DRILL EVALUATOR ASSIGNMENTS

MS-1 DRILL SEABROOK NPS/ SAINTS MEMORIAL MEDICAL CENTER LOWELL, MASSACHUSETTS JUNE 22, 2001

EVALUATION SITE	OBJECTIVE	EVALUATOR	ORGANIZATION
Trinity Ambulance Emergency Medical Services	20	James Gibbons	FEMA Region I
		Erica D'Avanzo	FEMA Region I
Saints Memorial Medical Center	21	Robert Waters	FEMA Region I
		Robert Swartz	FEMA Region I

APPENDIX II

EXERCISE OBJECTIVES, EXTENT-OF-PLAY, SCENARIO NARRATIVE, SCENARIO TIME LINE

EMERGENCY MEDICAL SERVICES AND SAINTS MEMORIAL MEDICAL CENTER EXERCISE OBJECTIVES

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

Objective 20: MEDICAL SERVICES – TRANSPORTATION

Demonstrate the adequacy of vehicles, equipment, procedures, and personnel for transporting contaminated, injured, or exposed individuals.

Extent-of-Play General

- Demonstrate control of the spread of contamination from individuals who may be contaminated and injured.
- Address priorities of care between control of contamination and the need for prompt transportation to a medical facility for care of an urgent condition.
- Transportation to a medical facility equipped to deal with a contaminated, injured individual.
- Communications with the medical facility by the vehicle crew while in route.
- Monitoring of emergency vehicle and determination of the need for decontamination.

- Demonstrate adequacy of plans and procedures for the care and transportation of contaminated or exposed individuals.

Extent-of-Play Specific

Demonstrate the ability of the Trinity Ambulance Service personnel to respond to a request for assistance and to:

- Don protective clothing as necessary.
- Obtain information on the patient's condition.
- Prepare the patient for transfer to the hospital.
- Prepare the ambulance for receiving a radiological contaminated patient.
- Transfer the patient to the hospital.
- Brief the receiving hospital on the patient's condition via ambulance radio.

Objective 21: MEDICAL SERVICES - FACILITIES

Demonstrate the adequacy of equipment, procedures, supplies, and personnel of medical facilities responsible for treatment of contaminated, injured, or exposed individuals.

Extent-of-Play General

- Demonstrate the ability to control the spread of contamination from individuals who may be contaminated and injured.
- Demonstrate the setting priorities between the need to address radioactive contamination and the prompt diagnosis and treatment of medical conditions.
- Demonstrate the appropriate decontamination of individuals.

Extent-of-Play Specific

Demonstrate the ability of Saints Memorial Medical Center staff to respond in accordance with the Saints Memorial Medical Center MS-1 Hospital Plan:

- Receive communications from the ambulance.

- Set up the REA and establish a radiologically controlled area.
- Treat the patient's injuries.
- Decontaminate the patient prior to release from the REA.

Demonstrate the ability of the hospital Radiological Safety Officer to:

- Assist in radiological control at the hospital.
- Collect and maintain control of all contaminated materials for decontamination and release or disposal.
- Perform surveys of the ambulance and ambulance crew prior to release.

SCENARIO NARRATIVE

A accident has occurred at the University of Massachusetts Lowell in the Energy Center involving a radiation worker. The Worker was carrying a small quantity of radioisotopes for delivery to Chemistry Lab. The package was dropped and sustained damage, and several vials of liquid broke. The worker sustained minor injuries and a potential fracture to the leg, and in an attempt to contain and control the spread of the leaking packages, has become contaminated.

University EMTs have responded to the scene and have stabilized and prepared the victim for transport to Saints Memorial Medical Center. The victim has lacerations to the left leg. Trinity Ambulance Service was called to transport the worker to the Medical Center.

All of the above actions will be simulated. This drill does not involve any on-scene medical activities. All such activities will be simulated or performed by controllers. The drill begins with the call from the Local EMTs to Saints Memorial Center indicating that the ambulance will be bringing a potentially contaminated and injured individual to the hospital.

Normal radio communications from the ambulance to the hospital will be established and maintained during the period that the victim is simulated to be in transit from the accident scene to the hospital.

The victim remains alert, but upset and nervous during transport to the hospital. Upon arrival at the hospital, the victim is transferred to the Radiation Emergency Area (REA) for evaluation and treatment.

A hospital Radiation Medicine Technician should assist the Emergency Department (ED) Staff in radiation monitoring and contamination control as needed. If done properly, the first decontamination attempt will reduce the contamination to as found. A hospital Nuclear Medicine Technician should survey the ambulance and crew for release, collect any simulated contaminated materials for proper disposal, and assist the staff as needed.

The attending physician will conduct a complete physical exam. He may order an x-ray of the lacerated leg. Once the victim is decontaminated and removed from the REA, the staff will exit the REA while demonstrating disrobing and monitoring and the exercise will terminate. A critique will be held immediately following the exercise.

SCENARIO TIME LINE

Elapsed Time (times are approximate)	**Event(s)**
-0005	(Message 1-AMB) Initial Conditions (all simulated) — Radiation Worker at the University of MA, Energy Center, Lowell. The Worker has sustained a minor laceration and potential fracture to the left leg. Victim is alert but has been handling leaking radioactive materials and may be contaminated.
0000	Drill begins (Message 2-AMB) Lowell EMT crew notifies Saints Memorial Medical Center of contaminated injured . ETA - 15 minutes
0015	Ambulance arrives at hospital, Nuclear medicine tech surveys victim, victim transferred to REA (Message 4-AMB).
0035	Nuclear medicine tech surveys ambulance and crew. Collects simulated contaminated materials (Message 5-AMB).
0040	ER staff demonstrates ability to: examine, decontaminate, and treat the victim- draw and process samples - perform contamination control, radiation monitoring, and record keeping functions. (Message 6-ER) (Message 7-ER)
0100	When decontaminated, victim may be removed from REA.
	Nuclear medicine technician survey victim, gurney/wheelchair, and staff upon exit from buffer zone - collect simulated contaminated materials for disposal.
	Recording staff collects and document dosimeters and data.
0115	Terminate when all objectives demonstrated or at the discretion of the Lead Controller - critique held in Conference Room D. (Message 8-All)