



# Federal Emergency Management Agency

Region VII  
2323 Grand Blvd., Suite 900  
Kansas City, MO 64108-2670

DEC 24 2002

Mr. James E. Dyer  
Regional Administrator  
U.S. Nuclear Regulatory Commission, Region III  
801 Warrenville Road  
Lisle, Illinois 60532-4351

Dear Mr. Dyer:

Enclosed is a copy of the final report for the October 21-22, 2002, medical drill and congregate care evaluations of the offsite radiological emergency response plans site-specific to the Quad Cities Nuclear Power Station. The Federal Emergency Management Agency (FEMA) Region VII staff prepared the report. A copy of the final report will be provided to the State of Iowa by the FEMA Region VII staff.

There were no Deficiencies identified during this drill. There were 2 Areas Requiring Corrective Action (ARCAs) identified during this drill regarding monitoring and emergency worker exposure control. Both ARCAs were corrected during the drill and are now closed.

The October 21-22, 2002, medical drill and congregate care drills evaluated the offsite radiological emergency response plans and preparedness for the State of Iowa and local jurisdictions, site-specific to Quad Cities Nuclear Power Station. Based on the results of this drill, the aforementioned plans can be implemented and are adequate to provide reasonable assurance that appropriate measures can be taken offsite to provide transport and treatment of contaminated, injured, or exposed individuals.

Should you have any questions, please contact Mr. Eric A. Jenkins, RAC Chairman and Chief, Preparedness and Readiness Branch, at (816) 283-7021.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard Hainje".

Richard Hainje  
Regional Director

Enclosure

cc: Vanessa Quinn, ONP-TH-RP (w/o enclosure)  
Ken Wierman, ONP-TH-RP (w/o enclosure)  
Roland Lickus, NRC III (w/enclosure)  
Kathy Halvey Gibson, NRC-HQ (w/enclosure)

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# Medical and Congregate Care Centers Drill Report

## Quad Cities Nuclear Power Station

Licensee: Exelon Corporation

Drill Date: November 20 - 21, 2002

Report Date: December 19, 2002

**FEDERAL EMERGENCY MANAGEMENT AGENCY**

**REGION VII**

**2323 Grand Boulevard, Suite 900**

**Kansas City, Missouri 64108**

**RICHARD HAINJE, REGIONAL DIRECTOR**

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## I. EXECUTIVE SUMMARY

On November 20, 2002, two congregate care centers were evaluated for their acceptability to support the evacuees around the Quad Cities Nuclear Power Station and the Duane Arnold Energy Center by the Federal Emergency Management Agency (FEMA), Region VII. It is noted that the congregate care facilities in Scott County are identified as support for both Quad Cities and Duane Arnold. Therefore, credit will be given to both locations. The evaluators for this demonstration were Norm Valentine and Jane Young from FEMA.

The previous demonstrations for these congregate care facilities at this site were conducted on July 27, 1994.

FEMA wishes to acknowledge the efforts of the North Scott School District for their support.

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, criteria, September 12, 2001 and April 25, 2002.

The following evaluation area and criterion was used for the congregate care centers:

### Support Operation/Facilities

#### 6.c.1. Temporary Care of Evacuees

There were no Areas Requiring Corrective Action, identified during the previous Quad Cities Nuclear Power Station drills that required corrective action or subsequent demonstration for reevaluation during this drill. The offsite agencies demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies and no Areas Requiring Corrective Action identified during this drill. It is noted that the Salvation Army has responsibility for shelter management; therefore, based on current FEMA policy (April 2002 Federal Register) these facilities will be evaluated once every six years and sooner if there are physical changes to the buildings.

On November 21, 2002, a medical drill was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Quad Cities Nuclear Power Station and evaluated by the Federal Emergency Management Agency (FEMA), Region VII. The purpose of the medical drill was to assess the ability of offsite agencies in responding to a radiological emergency involving a simulated medical injury to a member of the public with radioactive contamination. This medical drill was held in

## II. DRILL EVALUATION AND RESULTS

Contained in this section are the results of evaluation of the offsite agencies, which participated in the November 20-21, 2002, congregate care and medical drills. The congregate care demonstrations tested the offsite emergency response capabilities to implement protective actions for the mass care of evacuees in the event of an incident at the Quad Cities Nuclear Power Station. The medical drill tested the offsite emergency response organizations capabilities involving a simulated medical injury to a member of the public with radioactive contamination in the area surrounding the Quad Cities Nuclear Power Station.

This section provides information on the evaluation of each participating offsite agency, in a jurisdiction based, issues only format. Presented below is a definition of the terms used in this subsection relative to evaluation criteria demonstration status.

**Met** - Listing of the demonstrated drill evaluation criteria under which no Deficiencies or ARCAs were assessed during the congregate care or medical drills, and under which no ARCAs assessed during prior drills remain unresolved.

**Deficiency** - Listing of the demonstrated drill evaluation criteria under which one or more Deficiency (ies) were assessed during the congregate care or medical drills.

**Area Requiring Corrective Actions (ARCA)** - Listing of the demonstrated drill evaluation criteria under which one or more ARCAs were assessed during the congregate care or medical drills or ARCAs assessed during prior drills that remain unresolved.

**Not Demonstrated** - Listing of the drill evaluation criteria that were not demonstrated as scheduled during the congregate care or medical drills and the reason they were not demonstrated.

**Prior Issues - Resolved** - Descriptions of ARCAs assessed during previous exercises or drills that were resolved in this drill and the corrective actions demonstrated.

**Prior Issues - Unresolved** - Descriptions of ARCAs assessed during prior exercises or drills that were not resolved in this drill.

The following are definitions of the two types of exercise/drill issues that are discussed in this report.

A **Deficiency** is defined as "... an observed or identified inadequacy of organizational performance in an exercise/drill that could cause a finding that offsite emergency preparedness is not adequate to provide reasonable assurance that appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

An ARCA is defined as "... an observed or identified inadequacy of organizational performance in an exercise/drill that is not considered, by itself, to adversely impact public health and safety."

## **1. CONGREGATE CARE**

### **1.1 North Scott Junior High School and Edward White Elementary School.**

These facilities are located in Eldridge, Iowa, both within two blocks of the high school that serves as the Registration Center. Present for the walk through were representatives from the Salvation Army, North Scott School District, Scott County Emergency Management Agency, state of Iowa, and Exelon Corporation. Both facilities have undergone renovations, including the addition of two full size gymnasiums at the Junior High School. The congregate care manager (Salvation Army) and school representatives were very knowledgeable regarding the use of the facilities and their emergency responsibilities. One plan issue was identified in that the congregate care profile data was not current for either facility in relation to space and points of contact. All congregate care profiles should be reviewed and updated on an annual basis.

- a. **MET: 6.C.1**
- b. **DEFICIENCIES: NONE**
- c. **AREA REQUIRING CORRECTIVE ACTION: NONE**
- d. **NOT DEMONSTRATED: NONE**
- e. **PRIOR ARCAS - RESOLVED: NONE**
- f. **PRIOR ARCAS – UNRESOLVED: NONE**

## **2. MEDICAL**

### **2.1 Medic Emergency Medical Service.**

The ambulance service is based at Medic Emergency Medical Service in Davenport, Iowa. The ambulance crew demonstrated effective contamination control procedures.

They dressed in full anti-contamination suits and were equipped with the appropriate permanent record and self-reading (0-20R and 0-200mR) dosimeters in accordance with the plans. They effectively wrapped the victim, to control the spread of contamination, prior to transport to the medical center. The crew contacted the medical center enroute to report all pertinent information concerning the victim's medical condition and possible contamination. Throughout the drill, the crew demonstrated a high degree of professionalism.

- a. **MET:** 1.e.1; 3.a.1; 3.b.1; 6.d.1
- b. **DEFICIENCY:** NONE
- c. **AREA REQUIRING CORRECTIVE ACTION:** NONE
- d. **NOT DEMONSTRATED:** NONE
- e. **PRIOR ISSUES - RESOLVED:** NONE
- f. **PRIOR ISSUES - UNRESOLVED:** NONE

## 2.2 Genesis Medical Center.

This facility located in Davenport, Iowa, outside the emergency planning zone. The staff were very knowledgeable and thorough regarding contamination control. The entire staff, including security personnel, emergency room personnel, and administration is to be commended for their professional teamwork. One recommendation is to have the ambulance crew, hallway, and ambulance bay monitored by either the buffer zone monitor or have a second buffer zone monitor have this responsibility. This would reduce the possibility of cross contamination of other individuals and equipment. It is noted that the x-ray machine would have to move over the area that the potentially contaminated gurney had used in order to enter the examination area.

- a. **MET:** 1.e.1 and 3.a.1
- b. **DEFICIENCY:** NONE
- b. **AREAS REQUIRING CORRECTIVE ACTION:** 6.d.1

**Issue No.:** 51-2002-3.a.1.-A-01

**Description:** There was a high risk for cross contamination as the hospital staff wore their Self-reading dosimeters inside their protective clothing.

Wearing dosimeters in this manner would require all participants to reach inside their protective clothing to remove their SRD to read it and to record the information. This could have resulted in a spread of contamination to clothing and skin. It is noted that approximately one-half of the participants did wear their SRDs on the outside of their protective clothing.

**Recommendation:** See Corrective Action Below.

**Corrective Action Demonstrated:** Additional training and discussion was conducted regarding how to wear SRDs. Discussion included taping the dosimeters to the protective clothing, having a small bag on the outside with the dosimeter record form in it, or having a buffer nurse record the readings for each member of the emergency room staff. Based on the above demonstration and discussion this ARCA is closed.

**Issue No.:** 51-2002-6.d.1.-A-02

**Description:** The monitoring of the patient was not done in accordance with the plans and procedures. The monitor left the red cap cover on the probe. The probe then could only monitor for gamma radiation. The plastic used to cover the probe and instrument was extremely large and dragged over the patient. The monitoring speed was too rapid and the distance of the probe from the patient varied. Measuring only for gamma could result in beta contamination being missed. In addition, the rapid speed and varying distances could result in areas of contamination being overlooked. Part of the reason for the varying distances was due to the monitor continually stopping to obtain a better grasp on the excess plastic or raise the equipment so that the plastic would not drag over the patient.

**Recommendation:** See Corrective Action Below.

**Corrective Action Demonstrated:** The monitor removed the red cap and acknowledged that it would have been removed prior to initial monitoring of the patient. Monitoring procedures were discussed and appropriate speed and distance were demonstrated. Replacement of the large plastic bag in the kit with a smaller bag or other form of plastic will be done. Based on the above actions this ARCA is closed.

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



### **III. TABLE OF SUMMARY RESULTS OF DRILL EVALUATIONS**

TABLE 1

QUAD CITIES  
NUCLEAR  
POWER  
STATION

Out of Sequence

October 21-22, 2002

	Mobilization Facilities Direction & Control Communications Equipment Equipment & Supplies to Support Operations Emergency Worker Exposure Control Rad Assmt PARs Based on Avail Information Rad Assmt PADs for General Public Prot Action Decisions for Special Population's Rad Assmt & Decision Making for Ingest Exposure Rad Assmt & Dec Making for Relo/Re-entry/& Return Implementation of Emergency Wrkt Exposure Control Implementation of KI Decision Implementation of PADs for Special Population's Implementation of PADs for Schools Implementation of Traffic Access & Control Impediments to Evac & Traf are Identified & Resolved Implementation of Ingestion Pathway Decisions Impl of IP Decisions Show Strat & Instr Material Impl of Relocation/Re-entry/Return Decisions Plume Phase Measurement & Analysis Equip Plume Phase Field Measurement & Analysis Mgmt Plume Phase Fid Measurements & Analysis Proceed Post Plume Phase Field Measurements & Sampling Laboratory Operations Activation of Prompt Alert & Notification Activation Prompt Alert & Notif 15 Min (Fast Breaker Activation Prompt Alert & Notif in Exception Areas Emerg Info & Instructions for the Public & Media Monitoring/Decon/Registration of Evacuees & F/Ws Monitoring & Decon of Emerg Worker Equipment Temporary Care of Evacuees Plans & Treatment of Contain Injured Individuals																																
	EMERGENCY OPNS MANAGEMENT					PROTECTIVE ACTION DECISION-MAKING					PROTECTIVE ACTION IMPLEMENTATION								FIELD MEASUREMENT & ANALYSIS				EMERG NOTIF & PUBLIC INFO				SUPPORT OPN/FACILITIES						
	1a1	1b1	1c1	1d1	1e1	2a1	2b1	2b2	2c1	2d1	2e1	3a1	3b1	3c1	3c2	3d1	3d2	3e1	3e2	3f1	4a1	4a2	4a3	4b1	4c1	5a1	5a2	5a3	5b1	6a1	6b1	6c1	6d1
<b>SUPPORT OPERATIONS/FACILITIES</b>																																	
Aggregate Care - North Scott Junior																																	M
Aggregate Care - Edward White Elem																																M	
Medical Ambulance Service					M							M	M																			M	
James S Medical Center					M							M																				A1	

M - Met - No Deficiency or ARCA(s) Assessed and no Unresolved ARCAs from Prior Exercises  
 N - Not Demonstrated as Scheduled (Reason Explained in Section IV.B)  
 B - Not Scheduled for Demonstration

A - ARCA(s) Assessed or Unresolved ARCA(s) from Prior Exercises  
 A1 - ARCA Identified and Corrected During Exercise  
 D - Deficiency