



FEMA

January 4, 2008

Mr. Elmo E. Collins, Jr.
Regional Administrator
U.S. NRC, Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

Dear Mr. Collins:

Enclosed is a copy of the radiological emergency preparedness final report for the River Bend Station medical drill evaluated on November 1, 2007. We evaluated the West Feliciana Hospital and West Feliciana Ambulance Service in St. Francesville, Louisiana. There were no Deficiencies or Areas Requiring Corrective Action (ARCA) identified during the drill.

Based on the results of this drill, the off-site radiological emergency response plans and preparedness for the affected local jurisdictions are deemed adequate to provide reasonable assurance that appropriate measures can be taken to protect the health and safety of the public in the event of a radiological emergency. Therefore, 44 CFR Part 350 approval of the off-site radiological emergency response plans and preparedness for the State of Louisiana site-specific to River Bend Station will remain in effect.

A copy of this report was provided electronically to the Mr. Anthony McMurtray, Inspection and Communications Section, U.S. Nuclear Regulatory Commission, in Washington, D.C. Should you have questions, please contact me at 940-898-5199, or Elsa Lopez, Radiological Emergency Preparedness Site Specialist for Louisiana at 940-898-5308.

Sincerely,

A handwritten signature in black ink, appearing to read "L. Hammond".

Lisa R. Hammond
RAC Chairman

Enclosure

cc: NRC HQ – Anthony McMurtray
DHS-CNPPD HQ – Vanessa Quinn
DHS-CNPPD HQ – James Purvis
LDEQ - Jeffrey Meyers

River Bend Station

Drill Report - 2007-11-01

Final Report - Radiological Emergency

Preparedness (REP) Program

2008-01-04



FEMA





FEMA

Drill Report

River Bend Station

Drill Date: 2007-11-01

Report Date: 2008-01-04

U.S. DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

REP Program

800 North Loop 288

Denton, TX 76209

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1. Executive Summary

On November 1, 2007, an out-of-sequence medical drill was conducted for the River Bend Station (RBS), located near St. Francisville, Louisiana. Personnel from the U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) Region VI, evaluated all activities. The purpose of the drill was to assess the level of preparedness of local responders to react to a simulated radiological emergency at River Bend Station. The previous medical drill at this site was conducted on October 25, 2006. West Feliciana Parish Hospital and the West Feliciana Ambulance Service were previously demonstrated on October 26, 2005. The previous plume exercise was conducted on August 16, 2006.

Personnel from the State of Louisiana, River Bend Station, West Feliciana Ambulance Service, and West Feliciana Parish Hospital participated in the drill. Evaluation Areas demonstrated included: Emergency Operations Management, Protective Action Implementation, and Support Operations/Facilities. Cooperation and teamwork of all the participants was evident during the drill and DHS/FEMA wishes to acknowledge these efforts.

This report contains the final evaluation of the out-of-sequence drill. The participants demonstrated knowledge of their emergency response plans and procedures and adequately demonstrated them. There were no Deficiencies and no ARCAs identified during the drill.

2. Introduction

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all off-site nuclear planning and response. FEMA's activities under the REP Program 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.

Rule 44 CFR 350 establishes the policies and procedures for the DHS/FEMA Region VI Office'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 Region VI 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 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 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 Homeland Security-FEMA

- 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 Regional Assistance Committee (RAC), which is chaired by the Branch Chief of the DHS/FEMA Region VI Office. Formal approval of the RERPs was granted by FEMA on April 25, 1988 under 44 CFR 350.

The DHS/FEMA Region VI Office evaluated the medical drill on November 1, 2007, to assess the capabilities of local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving the River Bend Station (RBS). The purpose of this report is to present the results and findings on the performance of the offsite response organizations (OROs) during a simulated radiological emergency.

The findings presented in this report are based on the evaluations of the federal evaluation team, with final determinations made by the DHS/FEMA Region VI Office RAC Chair. The criteria utilized in the 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; and Interim REP Program Manual, including the Radiological Emergency Preparedness Exercise Evaluation Methodology (August 2002).

Interim REP Program Manual, including the Radiological Emergency Preparedness Exercise Evaluation Methodology (August 2002).

Section 3 of this report, entitled "Drill Overview," presents basic information and data relevant to the drill. This section of the report contains a description of the Emergency Planning Zone (EPZ), a listing of all participating jurisdictions and functional entities that were evaluated.

Section 4 of this report, entitled "Drill Evaluation and Results," presents detailed information on the demonstration of applicable evaluation areas at each jurisdiction or functional entity. If applicable, this section also contains: (1) descriptions of all Deficiencies and Areas Requiring Corrective Actions (ARCAs) assessed during the drill

and recommended corrective actions and (2) descriptions of unresolved ARCAs assessed during previous exercises and the status of the OROs efforts to resolve them.

3. Drill Overview

This section contains data and basic information relevant to the November 1, 2007, medical drill to test the offsite response capabilities in the area surrounding the River Bend Station (RBS). This section of the report includes a description of the Emergency Planning Zone and a listing of all participating jurisdictions and functional entities that were evaluated.

3.1. EPZ Description

The area within 10 miles of RBS is located in the State of Louisiana within the confines of West and East Feliciana Parishes, West and East Baton Rouge Parishes, and Pointe Coupee Parish. This area is referred to as the Emergency Planning Zone (EPZ).

The total population of the EPZ is 41,568 (Daytime Peak Season). Besides schools and churches, there are a few other special facilities. There are two hospitals within the 10-mile EPZ including the West Feliciana Parish Hospital (an MS-1 hospital). There are also four incarceration facilities. There are two paper mills, Tembec in West Feliciana and Georgia-Pacific in East Baton Rouge. In Pointe Coupee Parish, there are two electricity-generating plants, Big Cajun No. 1 and No. 2. Located approximately five miles south-southeast of River Bend Station (RBS) is the Port Hudson State Commemorative Area. Located approximately five miles north of RBS is the Locust Grove State Commemorative Area, and located approximately two miles north is the Audubon Commemorative Park.

There are two major railway lines running through the RBS EPZ. They are the Illinois Central Gulf and the Kansas City Southern Railroads. U.S. Highway 61, Louisiana State Highways 1, 10, 68, and 415 are the major roads within the EPZ.

The EPZ is divided into 18 Protection Action Sections (PAS) defined by geographical boundaries for the purpose of emergency response planning and their implementation of protective actions.

The 10-mile EPZ includes: RBS, Starhill, Audubon State Historic Site, St. Francisville, Hardwood, Elm Park, Bains Road, Airport Road, Mahoney Road, Carney, Freeland, Whitman, Tembec Area, Riddle Area, Tunica Swamp, Cat Island, Solitude, Wakefield, Beachwood, Bains, Jones Vaughn Creek Road, Freeland Road, Highway 10 between

Carney & Jackson, Williams Gas Pipeline/Transco and the sparsely populated area North of Highway 964 and West Highway 68, Delombre, Port Hudson State Historic Site, Jackson, Asphodel, Green Briar Road, Highway 68 south of Jackson City Limits to Highway 964, Highway 955 between Green Briar Road and Highway 412, Lindsay, Highway 68 south of Highway 964 to Highway 61, Highway 412 from Highway 955 to Thompson Road, Plains, Flanacher Road, Port Hudson, Bonn, Mount Pleasant, Port Hickey, Waterloo, and Big Cajun No.2, Rougon, Chenal, Ventress, Patins, Leavel, Ploup, Brooks, Schexnayder, and Beaud. The Mississippi River runs through the southwestern portion of the EPZ.

3.2. Drill Participants

Agencies and organizations of the following jurisdictions participated in the River Bend Station drill:

State Jurisdictions

- Louisiana Department of Environmental Quality

Private Jurisdictions

- River Bend Station

- West Feliciana Parish Hospital

- West Feliciana Parish Emergency Medical Service

4. Drill Evaluation and Results

Contained in this section are the results and findings of the evaluation of all jurisdictions and functional entities which participated in the November 1, 2007, drill evaluation to test the off site emergency response capabilities of local governments in the 10-mile Emergency Planning Zone surrounding the River Bend Station.

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

4.1. Summary Results of Drill Evaluation

The matrix presented in the table on the following page presents the status of all exercise evaluation area criteria which were scheduled for demonstration during the drill by all participating jurisdictions and functional entities. Exercise criterion are listed by number and the demonstration status of those criterion are indicated by the use of the following letters:

M - Met (No Deficiency or ARCAs assessed and no unresolved ARCAs from prior exercise)

D - Deficiency assessed

A - ARCAs assessed or unresolved ARCAs from previous exercises

N - Not Demonstrated (Reason explained in subsection B)

Table 1 - Summary of Drill Evaluation

DATE: 2007-11-01 SITE: River Bend Station, LA A: ARCA, D: Deficiency, M: Met		WFA	WFH
Emergency Operations Management			
Mobilization	1a1		
Facilities	1b1		
Direction and Control	1c1		
Communications Equipment	1d1		
Equip & Supplies to support operations	1e1	M	M
Protective Action Decision Making			
Emergency Worker Exposure Control	2a1		
Radiological Assessment and PARs	2b1		
Decisions for the Plume Phase -PADs	2b2		
PADs for protection of special populations	2c1		
Rad Assessment and Decision making for the Ingestion Exposure Pathway	2d1		
Rad Assessment and Decision making concerning Relocation, Reentry, and Return	2e1		
Protective Action Implementation			
Implementation of emergency worker exposure control	3a1	M	M
Implementation of KI decision	3b1		
Implementation of protective actions for special populations - EOCs	3c1		
Implementation of protective actions for Schools	3c2		
Implementation of traffic and access control	3d1		
Impediments to evacuation are identified and resolved	3d2		
Implementation of ingestion pathway decisions - availability/use of info	3e1		
Materials for Ingestion Pathway PADs are available	3e2		
Implementation of relocation, re-entry, and return decisions.	3f1		
Field Measurement and Analysis			
Adequate Equipment for Plume Phase Field Measurements	4a1		
Field Teams obtain sufficient information	4a2		
Field Teams Manage Sample Collection Appropriately	4a3		
Post plume phase field measurements and sampling	4b1		
Laboratory operations	4c1		
Emergency Notification and Public Info			
Activation of the prompt alert and notification system	5a1		
Activation of the prompt alert and notification system - Fast Breaker	5a2		
Activation of the prompt alert and notification system - Exception areas	5a3		
Emergency information and instructions for the public and the media	5b1		
Support Operations/Facilities			
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1		
Mon / decon of emergency worker equipment	6b1		
Temporary care of evacuees	6c1		
Transportation and treatment of contaminated injured individuals	6d1	M	M

4.2. Status of Jurisdictions Evaluated

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

Met - Listing of the demonstrated exercise evaluation area criteria under which no Deficiencies or ARCAs were assessed during this exercise and under which no ARCAs assessed during prior exercises remain unresolved.

Deficiency - Listing of the demonstrated exercise evaluation area criteria under which one or more Deficiencies were assessed during this exercise. Included is a description of each Deficiency and recommended corrective actions.

Areas Requiring Corrective Action - Listing of the demonstrated exercise evaluation area criteria under which one or more ARCAs were assessed during the current exercise or ARCAs assessed during prior exercises that remain unresolved. Included is a description of the ARCAs assessed during this exercise and the recommended corrective action to be demonstrated before or during the next biennial exercise.

Not Demonstrated - Listing of the exercise evaluation area criteria which were not demonstrated as scheduled during this exercise and the reason they were not demonstrated.

Prior ARCAs - Resolved - Description of ARCAs assessed during previous exercises that were resolved in this exercise and the corrective actions demonstrated.

Prior ARCAs - Unresolved - Description of ARCAs assessed during prior exercises that were not resolved during this exercise. Included is the reason the ARCA remains unresolved and the recommended corrective action to be demonstrated before or during the next biennial exercise.

The following are definitions of the exercise issues, which are discussed in this report.

A Deficiency is defined in FEMA-REP-14 as "an observed or identified inadequacy of organizational performance in an exercise that could cause a finding that off-site 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 in FEMA-REP-14 as "an observed or identified inadequacy of organizational performance in an exercise that is not considered, by itself, to adversely impact public health and safety."

The Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) has developed a standardized system for numbering exercise issues (Deficiencies and ARCAs). This system is used to achieve consistency in numbering exercise issues among FEMA Regions and site-specific exercise reports within each Region. It is also used to expedite tracking of exercise issues on a nationwide basis.

The identifying number for Deficiencies and ARCAs includes the following elements, with each element separated by a hyphen (-).

Plant Site Identifier-A two-digit number corresponding to the Utility Billable Plant Site Codes.

Exercise Year-The last two digits of the year the exercise was conducted.

Evaluation Area Criterion-A number and letter combination that corresponds with the criteria in the FEMA Evaluation Areas.

Issue Classification Identifier-(D = Deficiency, A = ARCA).

Exercise Issue Identification Number-A separate two (or three) digit indexing number assigned to each issue identified in the exercise.

4.2.1. Risk Jurisdictions

4.2.1.1. West Feliciana Ambulance

Criterion 1.e.1: The West Feliciana Parish Emergency Medical Services (EMS) provided ambulance service for the River Bend medical drill. The ambulance was equipped with an 800 MHz dispatch radio and up-to-date equipment and medical supplies for

treatment of the patient. The ambulance crew also had cell phones which were successfully used to communicate with the West Feliciana Parish Hospital for patient updates and estimated time of arrival (ETA).

The ambulance kit included:

- One survey meter with a range of reading sticker and a source response range of 38,400 – 57,600 cpm, calibrated on 10/2007 and due on 4/2008;
- Two Direct Reading Dosimeters (DRDs), calibration dates of 10/2007 and calibration due dates of 4/2008; and
- One charger.

A second kit maintained at the River Bend Station included:

- Six Thermoluminescent Dosimeters; and
- Supplies such as tape, contamination bags, rope, booties and gloves.

Criterion 3.a.1: Upon arrival of the ambulance at the River Bend Station (RBS) the two-member crew were issued their dosimetry from the RBS kit, direct-reading dosimeters (DRDs) and thermoluminescent dosimeters (TLDs), by the Radiation Protection Technician (RPT). The RPT made the entries on the dosimetry log and informed the ambulance crew to turn in their TLDs and DRDs after they were cleared by the RPT at the hospital.

The ambulance crew zeroed out their DRDs and knew their exposure limits. They were also familiar with procedures for checking their dosimetry every 15 minutes and recording their readings during the emergency response. The RPT used an Eberline ASP-1 portable frisker with pancake probe and a survey meter, which was used to read counts per minute (cpm). The crew was briefed on the patient's condition and radiological exposure by the utility RPT and the first responders. The ambulance crew transferred the patient to the ambulance, while making sure to change out their gloves and disposing of them in a contamination bag. The patient had been wrapped in a blanket and secured to the stretcher to prevent the spread of contamination. As the ambulance crew loaded the patient into the ambulance the utility RPT boarded the ambulance to accompany the patient and assist in controlling the contamination.

The crew was knowledgeable about their dosimetry, turnback values, and contamination control measures. The EMT changed out gloves several times and

disposed of all contaminated items appropriately during his evaluation of the patient while en route to the hospital.

Before the ambulance crew was released from the secured area at the hospital, another RPT arrived and performed a whole body frisk on the both of them. When no contamination was found, the crew members returned their TLDs and DRDs to the RPT, and the final readings were recorded on the Personnel Dosimetry Log. After releasing the ambulance crew, the RPT performed swipe surveys of the ambulance and tarp area. All swipes and gloves were disposed of in a contamination bag to be brought back to the plant.

Throughout the duration of the drill, the ambulance crew had basic knowledge of their radiation exposure limits per the procedures.

Criterion 6.d.1: On Thursday, November 1, 1007, at 0804, a simulated call was made requesting ambulance support for an injured employee who had fallen, resulting in a contaminated laceration on the employee's leg. The West Feliciana Parish Emergency Medical Services (EMS) ambulance arrived at the River Bend Training Center at 0822 to transport the patient. The RPT used an Eberline ASP-1 portable frisker with pancake probe and a survey meter, which is used to read counts per minute (cpm). After receiving the patient's condition and radiological exposure briefing by the utility RPT and the first responders, the ambulance crew transferred the patient from the spine board to the ambulance stretcher. The patient had been wrapped in a blanket and secured to the stretcher to prevent the spread of contamination. As the ambulance crew loaded the patient into the ambulance, the utility RPT boarded the ambulance to accompany the patient and assist in controlling the contamination.

At 0832, the ambulance headed to the hospital. During the transportation of the patient the EMT checked the vital signs and assessed the laceration. The EMT changed out gloves several times while attending to the patient and disposed of all contaminated items appropriately.

At 0837, the ambulance driver contacted the hospital with patient status and their estimated time of arrival. The ambulance arrived at the hospital at 0840 which had been setup to receive the contaminated injured patient. A yellow tarp was laid out on the ramp and roping and signs were in place to maintain contamination control. The ambulance crew briefed the hospital staff on the patient status and the utility RPT briefed on the radiological status and patient contamination levels. Prior to moving the

patient on the yellow tarp, the RPT took readings of the entire stretcher, including the wheels. Contamination control was maintained by the RPT and ambulance crew at all times. The RPT remained with the patient and accompanied the ER staff into the hospital to continue assisting with contamination control.

After releasing the patient to the hospital, another RPT arrived and performed whole body frisks of the ambulance crew. When no contamination was found, the crew was released from the secured area. The RPT then performed swipe surveys of the ambulance and tarp area and found no contamination. The RPT collected the ambulance crew TLDs and DRDs, and recorded the final readings. After the readings were logged, the RPT released the ambulance and crew. The RPT properly disposed of any potentially contaminated items in a contamination bag.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.e.1, 3.a.1, 6.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

4.2.2. Support Jurisdictions

4.2.2.1. West Feliciana Hospital

Criterion 1.e.1: The equipment contained within the radiation emergency area (REA), the dress-out cart, and decontamination cart was sufficient to support handling a radiologically contaminated patient. Maps and displays showed the set-up and administrative limits while working within the REA. The hospital maintenance crew relied heavily on the wall chart to setup the REA. The maintenance staff also secured entry into the REA by placing a yellow rope with a radiation warning sign across the doorway.

The REA was at the furthest end of the hallway from the ER entrance. The PPE, dosimetry, survey meters and administrative supplies were kept in a cart stored in the REA along with other set-up equipment and supplies used inside and outside the

hospital. A decontamination table/gurney with a drainage hose and waste water container; two barrels for contaminated materials (one for inside the REA and the other for the buffer zone area); medical supplies and wall mounted medical equipment for patient treatment; a decon cart and wall chart with treatment guidelines; and an intercom system were also in the REA.

The step-off pad was taped just outside of the REA for the nurses and doctor to safely doff clothing after the decontamination process.

There were several survey meters and dosimeters available to provide good exposure control. These included:

- Three Eberline ASP-1 meters with an HP Model 210AL probes (calibrated 07/2007) that read counts per minute;
- Ten 0-200 mR/Hr self-reading dosimeters (SRD) supplied by Entergy (calibrated 08/2007);
- Eight ring dosimeters (calibrated 01/2007); and
- Ten thermoluminescent dosimeters (TLDs) (calibrated 01/2007).

Each of the Eberline survey meters had a current range of reading sticker. An operational check and inspection was accomplished on each survey meter using an 8.0 μ Ci Cs-137 source. It was confirmed that River Bend Station sends all of their SRDs to Grand Gulf on a yearly basis to be leak tested and calibrated.

Criterion 3.a.1: The radiation emergency area (REA) and buffer zone staff were provided with the appropriate dosimetry to cover their administrative limits if reached during an emergency operation, and as outlined in their plans and procedures. Instead of using area dosimetry, each REA and buffer zone staff member was supplied a direct-reading dosimeter (DRD). Upon receiving the DRD, each staff member made sure that their initial reading was zero. Throughout the duration of the drill, the REA staff, as well as the buffer zone nurse showed strong knowledge in the exposure limits and absorbed dose. The buffer zone nurse tracked each DRD on the personnel dosimetry log. The initial, the thirty minute intervals, and closeout readings were recorded on the same log. The buffer zone nurse was interviewed after the transfer of the patient out of the REA and showed strong knowledge of emergency worker administrative limits as outlined in their plan and procedures.

The transfer of medical and radiological exposure control supplies was monitored closely

by the buffer zone nurse to prevent cross-contamination.

Criterion 6.d.1: The West Feliciana Parish Hospital (WFPH) emergency room (ER) department received a call from the River Bend Station (RBS) at 0805 on the designated blue phone at the nurse's station. The duty nurse recorded all the information received: patient status (left leg injury), possible contamination, accident details, ambulance estimated time of arrival (ETA) and the caller's name and address. At 0811, a second call was received in the ER of a real time incident which required re-routing the ambulance designated for the drill to the accident site. The nurse noticed that a call back number had not been provided; she immediately reached for a rolodex which contained the RBS telephone number and, she informed them of the situation. The plan had the Wakefield Emergency Medical Service designated as the back-up ambulance which had already been contacted and dispatched for additional support. The ER staff handled the situation promptly and efficiently.

In the meantime, the charge nurse continued with the set-up procedures of the radiological emergency area (REA) and assisting with the personal protective equipment (PPE) maintained in a cart. The team consisted of a doctor and one nurse for the REA, the buffer zone nurse, and a runner outside the buffer zone area. The doctor and nursing staff were contacted and asked to report to the REA. The charge nurse briefed them on the patient's medical condition and possible contamination.

The REA was set-up prior to patient arrival and was completed in accordance with the hospital procedures. Administrative supplies and radiological monitoring and exposure control equipment were all readily available. Good contamination control practices were demonstrated during the set-up which included donning the appropriate PPE and establishing a good barrier between the REA and the buffer zone.

At 0835, the ER nurse's station received a follow-up call from the ambulance en route with no change in the patient's medical condition, confirming contamination of 4000 cpm on the lower left leg, and providing an ETA of 5 minutes. The ambulance arrived with the patient at 0840, and the RBS radiation protection technicians (RPTs) and ambulance crew assisted in the transfer of the patient. A yellow tarp was used to minimize cross-contamination when the gurney was rolled out from the ambulance and the patient was transferred to the hospital gurney. During the transfer, the hospital staff was briefed on the patient's medical and radiological condition. The RPT surveyed the gurney wheels prior to moving the patient into the hospital and also conducted swipes of the receiving area and hallways which were found clean of contamination.

At 0845, the patient was rolled into the REA, and the RPT donned his PPE while the doctor did an initial examination of the patient, who was determined to be in stable condition. The doctor examined the laceration on the left leg while the RPT surveyed the leg and confirmed contamination of 4000 cpm. The nurse was tasked with initiating decontamination procedures with the assistance of the RPT. She carefully cut back the clothing while the RPT monitored the leg and medical equipment. The nurse used a saline solution and gauze wipes which the RPT surveyed for contamination and would collect and use to analyze the type of radiological contamination. After the first attempt, the contamination was reduced to 1500 cpm. The nurse continued to wash the wound as the RPT surveyed the wipes and after the second attempt, contamination was reduced to 1000 cpm. After a third attempt, the contamination was reduced to background levels. The charge nurse had the REA staff report on their dosimeter readings. At this time the RPT conducted a full body survey of the patient and the readings indicated background levels, allowing the doctor to do a complete medical exam. The patient was ready to be transferred for further treatment.

Throughout the drill, the charge nurse communicated with the REA staff making sure they followed the plans and procedures with the treatment of the patient and contamination control. All contaminated materials and equipment were properly disposed of and the nurse made sure to change gloves after each attempt to clean the wound. They displayed good decontamination techniques, the nurse wiped toward the contamination in an outward direction which helped control the spread of contamination.

The ASP-1 survey meters used were operationally checked and calibrated. The range of readings adequately covered the range needed to identify if the patient was contaminated. All information concerning the medical and radiological condition of the patient was recorded on the Patient Treatment Forms. The Personnel Dosimetry Log was also used throughout the drill recording the initial, follow-up and closeout readings.

The doctor demonstrated doffing his PPE, following the proper procedures as the RPTs and charge nurse assisted making sure they did not cross-contaminate. Through an interview, the RPT reviewed the close-out procedures for the REA and hospital. It was evident that he was extremely knowledgeable and provided detailed decon procedures including wiping the walls and swipes of the walkways used when transporting the patient and proper disposal of all waste materials. The RPTs would survey each other as the final step before leaving the hospital.

The drill was terminated at 0935.

In summary, the status of DHS/FEMA criteria for this location is as follows:

- a. MET: 1.e.1, 3.a.1, 6.d.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

APPENDIX 1

DRILL EVALUATORS AND TEAM LEADERS

DATE: 2007-11-01, SITE: River Bend Station, LA

LOCATION	EVALUATOR	AGENCY
West Feliciana Ambulance	*Linda Gee	DHS/FEMA
West Feliciana Hospital	*Chad Johnston Elsa Lopez	DHS/FEMA DHS/FEMA
* Team Leader		

APPENDIX 2

RIVER BEND STATION
2007 MEDICAL EMERGENCY RESPONSE EVALUATED DRILL
November 1, 2007
EVALUATION AREAS AND EXTENT-OF-PLAY (EOP) AGREEMENT &
ONSITE OBJECTIVES

RADIOLOGICAL EMERGENCY MEDICAL DRILL

FOR

RIVER BEND STATION

WEST FELICIANA PARISH HOSPITAL

AND

WEST FELICIANA PARISH EMS

November 1, 2007

RDRL-EP-07MS1DRIL

I PURPOSE

This simulated radiation medical emergency is being conducted in order to exercise the emergency medical response at River Bend Station and the primary medical support facility, West Feliciana Parish Hospital and West Feliciana Parish EMS. The basic objective is to assess the ability of the plant staff to respond effectively to a radiation medical emergency within the plant and, to test the ability of hospital and ambulance emergency service to handle contaminated and injured patients.

II PROPOSED SCHEDULE

DATE: November 1, 2007

TIME: 8:00 AM

LOCATIONS: River Bend Station & West Feliciana Parish Hospital

INJURY/ILLNESS: Fall victim conscious and bleeding

III EVALUATION AREAS AND EXTENT-OF-PLAY-OFFSITE

EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT

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

Criterion 1.e.1: Equipment, maps, displays, dosimetry, potassium iodide (KI), and other supplies are sufficient to support emergency operation. (NUREG-0654, H.7, 10; J.10.a, b, e J.11; K.3.a)

Locations

West Feliciana Parish Hospital and West Feliciana Parish EMS

Extent of Play

The ambulance crew should be knowledgeable on how to acquire dosimetry kits and potassium iodide (KI) during a declared emergency. The ambulance crew will discuss the method of obtaining dosimetry kits and KI from the ambulance when an emergency has been declared by interview with the evaluator. In accordance with the scenario for this evaluation, the utility will provide necessary dosimetry to the ambulance crew. "Correction-on-the-spot" will be applicable for this demonstration.

EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION

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

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

Locations

West Feliciana Parish Hospital and West Feliciana Parish EMS

Extent of Play

Dosimeters and a simulated TLD will be issued to participating ambulance crew members by RBS plant personnel. Hospital personnel will be issued dosimeters and TLDs at the hospital. Ambulance crew members will be prepared to discuss the method by which they would acquire dosimetry kits from the ambulance in the event of a declared emergency. "Correction-on-the-spot" will be applicable for this demonstration.

EVALUATION AREA 6: SUPPORT OPERATION/FACILITIES

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

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

Locations

West Feliciana Parish Hospital and West Feliciana Parish EMS

Extent of Play

The ambulance service will pick up the victim at the River Bend Station Training Center. Removal of victim's clothing will be simulated. Decontamination will be performed on and around wound areas that will be unclothed, and other areas if necessary. Intrusive bioassay samples will be simulated. No actual surgical procedures, X-ray, drawing of blood samples, etc. will be conducted. "Correction-on-the-spot" will be applicable for this demonstration.

Onsite Objectives

1. Demonstrate the use of emergency teams- onsite first aid (medical).
2. Demonstrate the capability to communicate with all appropriate emergency personnel at facilities and in the field.

GENERAL EXTENT-OF-PLAY (EOP):

1. With regard to last minute additions or changes to any previously approved Extent-of-Play, all suggested changes must be forwarded to the RAC Chair for approval.
2. The goal of all offsite response organizations (ORO) is to protect the health and safety of the public. This goal is achieved through the execution of appropriate plans and procedures. It is recognized that situations may arise that could limit the organizations in the exact execution of these plans and procedures.
3. In the event of an unanticipated situation, OROs are permitted to exercise flexibility in the implementation of their plans and procedures in order to successfully achieve the objective of protection of public health and safety and protection of the environment.
4. As a statement of fact, no ORO will deliberately deviate from its plans and procedures with the intent of avoiding responsibility.

References:

As indicated in the Extent-of-Play Agreement, the State of Louisiana requests the option to correct issues immediately as defined in FEMA Policy Paper, Strategic Review Steering Committee, Initiative 1.5, Correct Issues Immediately, effective March 31, 2000, signed by Kay C. Goss, CEM, Associate Director for Preparedness, Training and Exercises. Acceptable locations/activities for "on-the-spot-correction" are clearly indicated in the extent of play portion under each criterion.

EXERCISE CONTROLLERS/EVALUATORS

Myra Jones	Control Room	2789
John Standridge	Accident Scene/Lead	721-0887
Fred Hurst	TC and Hospital	324-6020
Sam Robertson	PAP and Ambulance retrieval location	Pager 3586
Gil Cosnett	West Feliciana Parish Hospital	1-856-261-5760

EXERCISE OBSERVERS

Nan Calhoun	Hospital
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ONSITE PHONE NUMBERS

Shift Manager	2776 --SM/Communicator Console 2789
RP	2771

APPENDIX 3

RIVER BEND STATION
2007 MEDICAL EMERGENCY RESPONSE EVALUATED DRILL
November 1, 2007

RADIOLOGICAL EMERGENCY MEDICAL DRILL SCENARIO

FOR

RIVER BEND STATION

WEST FELICIANA PARISH HOSPITAL

AND

WEST FELICIANA PARISH EMS

November 1, 2007

RDRL-EP-07MS1DRIL

NARRATIVE SCENARIO

NOTE: The times below are approximations and reflect the out-of-sequence portion of the onsite medical drill which will be conducted and evaluated by the utility later that day. The narrative is maintained in this order for scenario flow only.

Approximate Time:

1300

Location:

65' Level, Radwaste Building

Description:

An individual investigating the radiation alarms in the Radwaste Building near Phase Separator Tank TK-6B slips, and falls while climbing on maintenance scaffolding. During the fall he hits a sharp object and is injured and contaminated with spilled resins and water. The individual will be found on the floor by a co-worker (Controller), conscious, and bleeding slightly from a leg wound. The individual will be carried from the contaminated area by the co-worker.

Based on the individual's condition and vital signs, the First Responders responding to the scene should make the decision to transport without decontamination. The onsite portion of the drill will be evaluated by Emergency Planning and Security department personnel. The individual will be transported to the hospital where FEMA will observe hospital activities in accordance with the stated objectives.

Plant First Responders should provide a status on the individual's condition and vital signs, to the responding ambulance crew. Plant RP should status the ambulance crew on contamination issues.

Pre-Staging:

Plant (For afternoon utility evaluated portion)

A Medical Drill Controller and the simulated casualty will be pre-staged in the Radwaste Building prior to 1300. It is intended that the victim be on the 65' level; however the Controller should be sure to avoid any actual radiation exposure in conducting this drill.

Training Center (For morning FEMA evaluated offsite portion)

West Feliciana Parish EMS will be requested to report to the River Bend Training Center, parking lot due to time constraints and security issues. At approximately 0700, RBS first aid team members and RP technicians will then provide a status of patient and contamination conditions.

Sequence of Events:

Onsite (Out-of-sequence events)

- 1250 Tank TK-6B ruptures spilling a full tank of resin on the floor and in the floor drains. Area radiation monitors alarm.
- 1252 A Radwaste Operator is dispatched to investigate the monitor alarms.
- 1257 The Radwaste Operator slips, falls and is injured and contaminated.
- 1300 Control Room notified.
- 1305 Activate First Responders.
- 1315 First Responders arrive and evaluate the injury. Decision should be reached to transport as soon as possible, without prior decontamination. Injury and contamination data is provided on attachments.
- 1325 Control Room request offsite support.

Offsite sequence (FEMA portion)

- 0805 Ambulance enters onsite (RBS Training Center)
- 0825 Ambulance departs site (RBS Training Center)
- 0835 Ambulance arrives at West Feliciana Parish Hospital
- 0915 Drill Terminated

CONTROLLER MESSAGE

Message: **ACCIDENT SCENE-CONTROLLER**

Number # 4

//

THIS IS A DRILL

//

RADIATION SURVEY RESULTS

General Area Survey = as found

General contamination readings on injured man = <1mR/hr./4000cpm

General Area Smears = as found.

Injured's pocket EAD = as found

Air Sample = as found

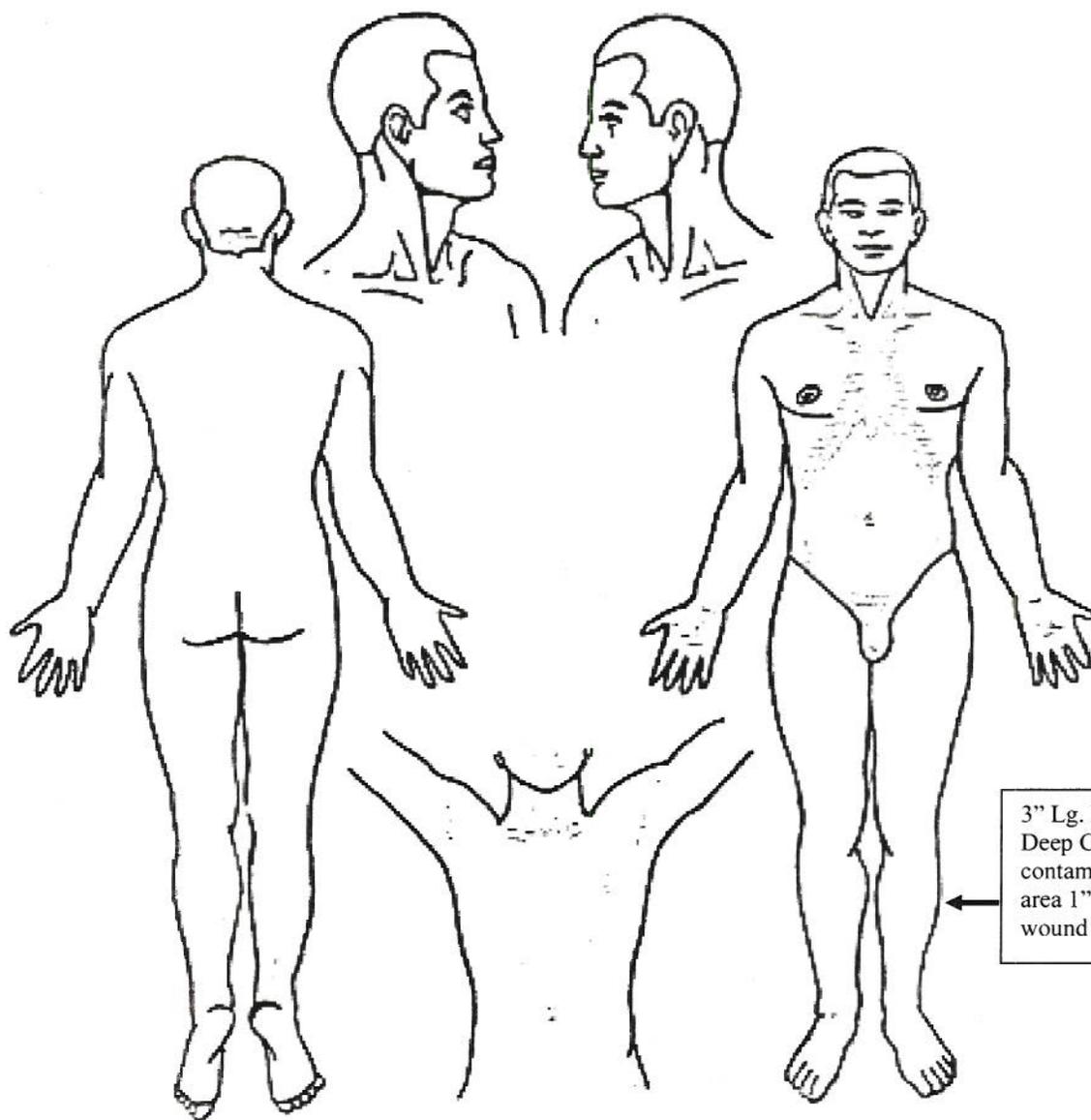
Controller Note: Issue data message information only after Radiation Protection Technicians have started survey.

//

THIS IS A DRILL

//

ANATOMICAL DIAGRAM



CONTROLLER MESSAGE

Message: **PLANT INFORMATION-CONTROLLER**

Number # 7

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THIS IS A DRILL

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NOTE: Security Controller is to ensure the Control Room is notified that the ambulance (simulated) has exited the site.

ONSITE MEDICAL DRILL IS TERMINATED

//

THIS IS A DRILL

//

ATTENTION

**THERE WILL BE AN ONSITE
MEDICAL DRILL TODAY**

11/01/07

**WEST FELICIANA PARISH EMS
WILL BE AT THE TRAINING
CENTER**