

Waterford 3 Steam Electric Station  
Drill Report - 2009-09-29  
Final Report - Radiological Emergency  
Preparedness (REP) Program  
2009-10-28





# FEMA

## Drill Report

Waterford 3 Steam Electric Station

Drill Date: 2009-09-29

Report Date: 2009-10-28

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 September 29 and 30, 2009, out-of-sequence Emergency Worker Monitoring and Decontamination Center and Medical Services drills were conducted for the Waterford 3 Electric Steam Station (W3), located near Taft, St. Charles Parish, 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 drills was to assess the level of preparedness of local responders to react to a simulated radiological emergency at Waterford 3 Steam Electric Station. The previous medical drill at this site was conducted on October 30-31, 2007, while the emergency worker monitoring and decontamination drill was conducted on August 05, 2003. The previous plume exercise was conducted on June 24, 2009.

Personnel from the State of Louisiana, Waterford 3 Steam Electric Station, Kenner Fire Department, Ochsner Medical Facility, and St. Charles Ambulance Services participated in the drills. Cooperation and teamwork of all the participants was evident during the drills and DHS/FEMA wishes to acknowledge these efforts.

This report contains the final evaluation of the out-of-sequence drills. The participants demonstrated knowledge of their emergency response plans and procedures and adequately demonstrated them. There were no Deficiencies, two Areas Requiring Corrective Action (ARCAs), that were corrected on the spot, and one Plan Issue was identified during the drills.

## 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 offsite emergency planning and in the review and evaluation of radiological emergency response plans (RERPs) and procedures developed by state and local governments;

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

Responding to requests by the U.S. Nuclear Regulatory Commission (NRC) pursuant to the Memorandum of Understanding between the NRC and FEMA dated 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 Agriculture
- U.S. Department of Commerce
- U.S. Department of Defense
- U.S. Department of Energy
- U.S. Department of Health and Human Services

- U.S. Department of Homeland Security/FEMA
- U.S. Department of Housing and Urban Development
- U.S. Department of the Interior
- U.S. Department of Transportation
- U.S. Department of Veterans Affairs
- U.S. Environmental Protection Agency
- U.S. Federal Communications Commission
- U.S. Food and Drug Administration
- U.S. Nuclear Regulatory Commission
- General Services Administration
- National Communications System.

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 Waterford 3 plans were granted by FEMA on April 25, 1988 under 44 CFR 350.

A REP exercise was evaluated on June 24, 2009, by DHS/FEMA Region VI Office to assess the capabilities of state and local emergency preparedness organizations in implementing their RERPs and procedures to protect the public health and safety during a radiological emergency involving Waterford 3. The purpose of this drill report is to present the drill results and findings on the performance of the off-site 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).

Section 3 of this report, entitled "Drill Overview," presents basic information and data relevant to the drills. 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 drills 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 September 29 and 30, 2009, Emergency Worker Monitoring and Decontamination and Medical Services drills to test the off-site response capabilities in the area surrounding the Waterford 3 Steam Electric Station (W3). 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-mile EPZ of Waterford 3 is entirely in the State of Louisiana. The most prominent natural feature in the EPZ is the Mississippi River running from westnorthwest to east-southeast through the middle of the area. The Waterford 3 EPZ involves two parishes, St. John the Baptist Parish and St. Charles Parish. There are several communities near the site within the 10-mile EPZ. These include Killona, Montz, Norco, Destrehan, Hahnville, Luling, LaPlace, Edgard, Reserve, and Garyville.

The 2000 census estimated the population of the EPZ to be 91,116 persons mainly concentrated in towns along the Mississippi River. There are two hospitals, two nursing homes, and two incarceration facilities in the EPZ.

The major highways include I-10, I-310, I-55, U.S. Highways 61, 51, and 90, and Louisiana Highways 18 and 3127. There are four railways in the EPZ, which are the Canadian National Railroad, Kansas City Southern Railroad, Union Pacific Railroad, and Burlington Northern Railroad. The Waterford 3 EPZ is divided into 16 Protective Action Sections for the purpose of emergency response and implementation of protective actions.

The area within 50 miles of Waterford 3 is entirely in the State of Louisiana. The principal exposure from this pathway would be from ingestion of contaminated water or foods such as milk, fresh vegetables or aquatic foodstuffs. The Ingestion Pathway (IPZ) consists of the parishes contained within the 10-mile EPZ plus the following parishes: Ascension, Assumption, East Baton Rouge, Iberia, Iberville, Jefferson, Orleans, Lafourche, Livingston, Plaquemine, St. Charles, St. Bernard, St. James, St. Helena, St. John the Baptist, St. Martin, St. Mary, St. Tammany, Tangipahoa, Terrebonne, and West Baton Rouge. The 50-mile IPZ contains two large metropolitan areas: New

Orleans and Baton Rouge. The 2000 census reports approximately 2,503,073 persons in the parishes making up the 50-mile IPZ.

## 3.2. Drill Participants

Agencies and organizations of the following jurisdictions participated in the Waterford 3 Steam Electric Station drill:

### Risk Jurisdictions

Kenner Fire Department

Ochsner Medical Facility

St. Charles Ambulance Services

## 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 September 29 and 30, 2009, drill evaluation to test the off-site emergency response capabilities of local governments in the 10-mile Emergency Planning Zone surrounding the Waterford 3 Steam Electric 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 - ARCA(s) assessed or unresolved ARCA(s) from previous exercise(s)

N - Not Demonstrated (Reason explained in Subsection B)

Table 1 - Summary of Drill Evaluation

DATE: 2009-09-29 SITE: Waterford 3 Steam Electric Station, LA A: ARCA, D: Deficiency, M: Met, N: Not Demonstrated		Kenner EW M/D	St. Charles Amb.	Ochsner Hosp.
<b>Emergency Operations Management</b>				
Mobilization	1a1			
Facilities	1b1			
Direction and Control	1c1			
Communications Equipment	1d1			
Equip & Supplies to support operations	1e1	M	M	M
<b>Protective Action Decision Making</b>				
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			
<b>Protective Action Implementation</b>				
Implementation of emergency worker exposure control	3a1	M	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			
<b>Field Measurement and Analysis</b>				
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			
<b>Emergency Notification and Public Info</b>				
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			
<b>Support Operations/Facilities</b>				
Mon / decon of evacuees and emergency workers, and registration of evacuees	6a1	M		
Mon / decon of emergency worker equipment	6b1	M		
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 powerplant."

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. St. Charles Ambulance Service

**Criterion 1.e.1:**

The St. Charles Ambulance Service was pre-staged in the parking lot at the Ochsner Medical Center, New Orleans, Louisiana in accordance with the extent of play agreement. The ambulance crew received their dosimetry response kit from the St. Charles Parish Emergency Operations Center (EOC). The ambulance crew picked up their dosimetry kits from the EOC prior to pre-staging for the drill.

The kit issued to the Emergency Medical Technicians (EMTs) contained a low range CDV 730 (0-20R) dosimeter and a high range CDV 742 (0-200R) dosimeter; and a permanent record thermoluminescent dosimeter (TLD) with a distribution date of 01/09. Individual Dosimeter Report Forms that provided for recording of readings and instructions and cautions were also included in the kit. A Health Physicist (HP) from the plant also issued a Direct Reading Dosimeter (DRD) to the ambulance crew with a range of 0-200 mR and a calibration date 04/09. The HP utilized a Ludlum 12 survey meter with a pancake probe, which was covered, to perform monitoring. The Ludlum survey meter had a calibration date of 08/06/09 and had a range of readings sticker affixed to the side that read 60000 to 90000 Counts Per Minute (CPM).

The ambulance crew utilized a mounted 800 MHz radio along with individual assigned portable radios for communications. The crew also has Nextel cellular phones. The cellular phone was successfully used for communication with the hospital and their dispatch to provide timely patient status updates and to provide estimated time of arrivals for this drill.

The ambulance had sufficient medical equipment and supplies to treat an injured and/or contaminated victim. They had several boxes of surgical gloves and hazardous material trash bags. The patient was wrapped with a heavy duty yellow plastic sheet and sealed with tape to prevent cross contamination.

**Criterion 3.a.1:**

The St. Charles Ambulance Service provided medical transportation for the Waterford 3 medical drill. The ambulance was dispatched at 0800 following a simulated call from Waterford 3 reporting a contaminated injured worker on site. The ambulance was pre-staged in the hospital bay area as per the extent of play agreement to provide medical transportation. The ambulance was equipped with radiological kit. Each medic donned a thermoluminescent dosimeter (TLD), 0-200 mR dosimeter, 0-20 R dosimeter, 0-200R dosimeter, coveralls, double gloves, booties and shoe covers. The Waterford 3 Health

Physicist (HP) also issued each medic a 0-200 mR dosimeter.

The medics were knowledgeable about their dosimetry and contamination control measures. At the beginning of the drill, the ambulance crew confirmed their dosimeters were zeroed and recorded readings every thirty minutes. At the end of the drill, final readings were properly recorded and the dosimeter forms were turned into officials (simulated) at the St. Charles Parish Emergency Operations Center (EOC). Per interview, the medics had a good understanding of their administrative levels and would contact their supervisor if their dosimeter read 1 R. Both medics also understood their turnback value was 5 R and knew to call the EOC for further direction. In addition, the medics had detailed instructions to reference on their dosimetry report forms.

**Criterion 6.d.1:**

The St. Charles Ambulance Service was pre-staged at the Oschner Medical Center in New Orleans, LA as per the extent of play. Prior to arrival of the ambulance, the Health Physicist (HP) simulated the accident and injuries to the patient. The medics retrieved their radiological kit, checked to see their dosimeters were zeroed and properly donned their thermoluminescent dosimeters (TLDs) and direct reading dosimeters. The kit also included individual dosimeter report forms with detailed instructions. The HP accompanying the patient took the lead on the radiation contamination control. The HP also issued 0-200 mR dosimeters to each medic.

When the ambulance arrived, the HP briefed the medics on current contamination levels, medical history, and the medical condition of the patient. In addition, the HP who accompanied the patient was provided a Medical Emergency Report from the plant's medical staff which indicated contamination levels and medical information. The HP was equipped with a Ludlum 12 survey meter with pancake probe, calibrated on 08/06/09. The patient was wrapped in a heavy duty plastic protective covering to minimize the spread of contamination. Since the patient was stable, the medics determined no immediate medical attention was necessary and provided transportation only while continuing to assess the patient. At 0805 and 0810, the medic contacted the hospital to update the emergency room staff on the condition of the patient and their estimated time of arrival. At 0835, the ambulance arrived at the hospital (simulated) and the medics and HP briefed the hospital staff on the patient's medical condition and contamination levels.

After the transfer of the patient to the hospital staff, the HP surveyed the entire gurney and the ambulance patient area. In addition, the HP conducted swipes (using large

area wipes) of the ambulance bay area and found no contamination. The HP also demonstrated a full body survey on the medics, including their feet and hands. When no contamination was found, the ambulance and medics were released. The HP also collected the used swipes and gloves in a plastic contamination bag to be brought back to the plant.

During the drill, the medics were equipped with adequate communications equipment. Both crew members carried a handheld 800 megahertz (MHz) radio and a cell phone as backup. For this drill, cell phones were used to communicate with the Oschner Medical Center and provide updates and estimated times of arrival.

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. Kenner Fire Department Emergency Worker Monitoring and Decontamination

#### **Criterion 1.e.1:**

At the Kenner Emergency Worker Monitoring and Decontamination station each team received a Ludlum Model 3A with pancake probe as they checked in. All survey meters were operationally checked against a range of reading from a known check source, after additional training was provided by the controller, and were calibrated on 9/1/09. In addition, operations checks were conducted and background readings recorded. Range of reading stickers were clearly visible on all survey meters. Each team member was also provided Optically Stimulated Luminescent (OSL) dosimeters for permanent record dosimeters. In addition, one member of each team was issued a Dosicard (calibrated 9/2009) which served as area dosimetry and the appropriate checklist for their station. The Acting Officer in Charge recorded the equipment that was issued on

the Dosimetry Distribution Log in accordance with their procedures. Team members donned gloves, booties and shoe covers.

Each station was well equipped with adequate supplies to accomplish the assigned function. After an Emergency Worker briefing, the teams retrieved their supply kits, signage, tables, equipment, and began setting up their stations. There were supply kits for the following stations:

- Officer in Charge
- Vehicle Monitoring
- Personnel Monitoring
- Decontamination
- Extra Supplies

The inventory of equipment used for the drill included:

- 5 Ludlum 3A survey meters with pancake probe (calibrated 9/1/09, due 10/01/2010)
- 25 Landauer Luxel Optically Stimulated Luminescent (OSL) Dosimeters
- 5 Canberra Dosicards calibrated 09/2009, calibration due 09/2010
- 1 Cesium 137 check source
- Batteries

#### Monitoring and Decontamination

The monitoring and decontamination team members were equipped with a Canberra electronic dosimeter card and each member donned a simulated Thermoluminescent Dosimeter (TLD). Both teams were issued their supply kits with equipment and supplies indicated on their checklist. The boxes contained adequate supply of gloves, booties, shoe covers, masking tape, plastic bags, rubber bands, clip boards, towels, duct tape, masking tape, pencils, brown craft paper, etc. They were also well equipped with supplies that could be used to remove contamination such as lint rollers, waterless hand sanitizer, soap, wipes, towels and trash bags. In addition, they were equipped with a Zumro mass decontamination tent where individuals could shower to remove contamination. Informational signs, job aids and checklists were also issued with the kit.

#### Vehicle Monitoring

Upon arrival, the vehicle monitoring team was issued a Canberra electronic dosimeter card and each member donned a simulated TLD. All equipment and supplies for the vehicle monitoring station were stored in plastic boxes. The box contained an adequate supply of gloves, booties, shoe covers, masking tape, plastic bags, rubber bands, clip boards, pencils, etc. In addition to supplies, there were informational signs and job aids. However, the vehicle monitoring station was not set up with cones or barrier material to control the areas required in the vehicle monitoring procedure.

**Criterion 3.a.1:**

The implementation of emergency worker exposure control was successfully demonstrated. The controller initiated the response call at 1600 from the Kenner Fire Department Emergency Worker Decontamination Station (KFDEW Decon Station) to the Kenner Fire Department (KFD) dispatch. Operator #28 answered the call at KFD dispatch. The dispatched KFD responders arrived at the KFDEW Decon Station at 1606.

Upon arrival, the Officer-In-Charge (OIC) sent a member of the KFD responders to retrieve the KFDEW Decon Station supply kits from a storage room. The supply kits contained dosimetry, personal protective equipment (PPE), turnback limit signs, decontamination level signs, and other response supplies. The teams were also issued survey meters. The OIC split the KFD responders into three teams (vehicle monitoring, personnel monitoring, and personnel decon). Each team consisted of a monitor, recorder, and a third team member that ensured procedures were being followed. The Assistant OIC distributed dosimetry and team kits, and briefed the teams on dosimetry use, contamination levels, and turnback limits.

The teams used area-wide dosimetry, and each team was issued a Canberra Dosicard electronic dosimeter (calibrated on 9/2009). However, each responder at the KFDEW Decon Station was issued a simulated TLD. Landauer Luxel Optically Stimulated Luminescent (OSL) badges were available for an actual response, but simulated TLDs were used for drill purposes. The teams were instructed to wear the dosimeters on the front of their bodies, and to read and record dosimeter readings every thirty minutes.

The teams donned two pairs of shoe covers, taping the top of the inner pair to their pants leg to prevent contamination from entering the shoe cover. The teams also donned latex gloves and placed plastic baggies over the survey meter probes to prevent contamination. The personnel monitoring team put down a craft paper pathway and step-off pad leading from the entrance of the KFDEW Decon Station to the personnel

decon area. The personnel monitoring team also posted instruction signs with turnback limits and contamination levels.

A member of the vehicle monitoring team escorted an emergency worker (EW) to the personnel monitoring area and stated the EW had arrived in a contaminated vehicle. The EW was asked by the personnel monitoring team's recorder for his personal information to document on the Personnel Contamination Report. The EW was given a thorough hand survey and was found to have contamination on his left forearm. A reading of 2000 counts per minute (cpm) was recorded on the Personnel Contamination Report. A background check had been performed previously and recorded as 30 cpm. Upon questioning, the personnel monitoring team stated that they were looking for any reading twice the background level and that would indicate contamination was present. The EW was then handed a pair of gloves, and instructed to remove and place his personal belongings into a plastic bag. The bag was then labeled by the personnel monitoring team, and surveyed for contamination. The Personnel Contamination Report was placed into a separate plastic bag and handed to the EW, who was then instructed to proceed on to the personnel decon area.

The personnel monitoring team then placed a clean layer of craft paper over the previous pathway and step-off pad to prevent any contamination from spreading.

During a post-drill interview, the personnel monitoring team stated that the pathway, step-off pad, and waste placed into bags would be left at the KFDEW Decon Station until properly collected and disposed of by a contractor. The personnel monitoring team stated that dosimetry would be turned into the OIC once the shift was completed. The personnel monitoring team also demonstrated basic knowledge of exposure limits.

**Criterion 6.a.1:**

The Waterford 3 Emergency Worker Monitoring and Decontamination drill took place on September 29, 2009. Members of the Kenner Fire Department participated in the drill. There were adequate supplies to support monitoring and decontamination of emergency workers at this location. Set up of the facility included an area for vehicle monitoring, an area for personnel monitoring, and an area for decontamination.

During set up of the facility, the Officer in Charge (OIC) provided a briefing to staff, assigned response positions, and issued dosimeters, and simulated Thermoluminescent Dosimeters (TLD) badges in place of OSLs to responders. The procedure calls for the use of area dosimetry, so the OIC assigned the monitor at each

station to wear the Canberra Dosicard and check it every thirty minutes. All team members were issued their own simulated TLD. The OIC also reminded monitors to perform operational checks and take a background reading.

One member of the team was responsible for performing all operational checks on the Ludlum 3A survey meters before they were issued. The player checked each meter for current calibration, and then for battery power turning the meter on and testing the battery. The meter was then tested for operation by placing the probe near the source affixed to the side of one of the five survey meters. The player considered the meter to be in proper working order if it gave any response to the source when tested. This practice was not in keeping with the procedure, which requires the instrument response to the source to fall within 10% of the range identified on calibration sticker affixed to each meter. The controller stopped the player and provided additional training. Following this training, the player was able to demonstrate the proper method for performing an operational check in accordance with the procedure.

The teams used area-wide dosimetry, and each team was issued a Canberra Dosicard electronic dosimeter (calibrated on 9/2009). However, each responder at the KFDEW Decon Station was issued a simulated TLD. Landauer Luxel Optically Stimulated Luminescent (OSL) badges were available for an actual response, but simulated TLDs were used for drill purposes. The teams were instructed to wear the dosimeters on the front of their bodies, and to read and record dosimeter readings every thirty minutes.

The teams donned two pairs of shoe covers, taping the top of the inner pair to their pants leg to prevent contamination from entering the shoe cover. The teams also donned latex gloves and placed plastic baggies over the survey meter probes to prevent contamination. The personnel monitoring team put down a craft paper pathway and step-off pad leading from the entrance of the KFDEW Decon Station to the personnel decon area. The personnel monitoring team also posted instruction signs with turnback limits and contamination levels.

A member of the vehicle monitoring team escorted an emergency worker (EW) to the personnel monitoring area and stated the EW had arrived in a contaminated vehicle. The EW was asked by the personnel monitoring team's recorder for his personal information to document on the Personnel Contamination Report. The EW was given a thorough hand survey and was found to have contamination on his left forearm. A reading of 2000 counts per minute (cpm) was recorded on the Personnel Contamination Report. A background check had been performed previously and recorded as 30 cpm.

Upon questioning, the personnel monitoring team stated that they were looking for any reading twice the background level and that would indicate contamination was present. The EW was then handed a pair of gloves, and instructed to remove and place his personal belongings into a plastic bag. The bag was then labeled by the personnel monitoring team, and surveyed for contamination. The Personnel Contamination Report was placed into a separate plastic bag and handed to the EW, who was then instructed to proceed on to the personnel decon area.

The personnel monitoring team then placed a clean layer of craft paper over the previous pathway and step-off pad to prevent any contamination from spreading.

When the contaminated responder arrived at the decontamination station, the monitor requested that the individual open the plastic bag containing the Personnel Contamination Report. The Recorder removed the report from the bag and asked the individual to discard the bag in an appropriately labeled container for contaminated waste. The Recorder informed the monitor that there was an area of contamination on the individual's left arm, near the elbow, reading 2000 cpm. The monitor surveyed the individual's entire arm using good technique of about an inch from the arm moving about three inches per second. This survey confirmed the area of contamination that was documented on the Personnel Contamination Form. The individual was asked to remove his shirt. He was then provided a lint roller and asked to roll it over the area of the arm that was contaminated. The area was then surveyed again and readings were approximately 40 cpm or background. The decontamination team was interviewed on other steps that may have been taken to remove the contamination had this first attempt not been successful. If necessary, the team would have used wet wipes followed by waterless sanitizer and then soap and water if needed. If a person were to have multiple areas of contamination, the decon tent could be set up for full body showers.

Once the individual was free of contamination, the monitor directed him to remove his booties and place them in the bag labeled for contaminated waste. He then was instructed to remove his gloves, also placing them in the appropriately labeled bag. His valuables were returned and a "clean" stamp was placed on his hand. The individual was then released. At this point, another correction was provided by the controller. Procedures called for a final whole body contamination survey to assure the person was clean. The procedure was noted to the player by the controller. The monitor performed the full body survey using proper technique.

During a post-drill interview, both the personnel monitoring and decontamination teams

stated that the pathway, step-off pad, and waste placed into bags would be left at the KFDEW Decon Station until properly collected and disposed of by a contractor. In addition, the floors would be surveyed for contamination and decontaminated as needed. Dosimetry would be turned into the OIC once the shift was completed. All members of the response team would be surveyed before they were released.

**Criterion 6.b.1:**

Kenner Fire Department personnel successfully demonstrated emergency worker (EW) vehicle monitoring and decontamination at the old Fire Station #36 located at 300 Worth Street in Kenner, Louisiana. At 1600, dispatch was notified of an incident at the Waterford 3 Steam Electric Station. Personnel began arriving at 1604. At 1609, additional units totaling approximately 6 arrived; this included fire engines and the District Fire Chief vehicles. The Officer in Charge kit, and additional supplies were delivered to the Decontamination area. A briefing was conducted by the Officer in Charge (OIC). As assignments were issued by the OIC, the personnel began collecting their station supply kits, dosimetry, and survey meters to set up their stations.

After retrieving the station supply kits, the personnel gathered outside of the building to set up the vehicle decontamination station. The vehicle decontamination team consisted of two vehicle monitors and one recorder. Each person had been issued dosimetry. Personal dosimetry was simulated by Thermoluminescent Dosimeter (TLD) badge. Group dosimetry was accomplished through a badge that had simulated dosimetry information which one individual wore. The station was equipped with two survey meters. The vehicle monitors performed an operational check with a Cs-137 source and verified with the range of readings sticker on the survey meters. Background readings were taken and determined to be 50 counts per minute (CPM) which was recorded on the Vehicle Contamination Survey Report.

There were three signs posted on the outside wall of the building stating the contamination level requiring decontamination being two times background, to monitor on the 0.1 X scale for the survey meters, and that the Emergency Worker (EW) exposure limit is 1 REM or 1,000 mREM.

At 1630, the team members were set up and ready to receive the EW vehicle. The vehicle monitoring team was also equipped with an adequate amount of equipment and supplies to set up the clean and contaminated parking areas. All vehicle monitoring team members were dressed out in yellow plastic boots, with shoe covers on the outside, and rubber gloves. At 1634, the recorder began working through the vehicle

monitoring checklist according to their plans and procedures.

The monitors knew what areas of the EW vehicle were critical to monitor (i.e., tires, wheel-well area, door handles, bumper and air intake). Both monitors demonstrated proper monitoring techniques. They started surveying the front grill and bumper areas and proceeded to each survey one side of the vehicle. The monitor on the passenger side of the vehicle was informed that the pancake probe had come in contact with the tire (by controller inject). The monitor changed the cover on the probe and then continued his survey as per the procedures.

The monitor on the driver's side of the vehicle was informed (by controller inject) that the meter on his survey meter had pegged out and was shown a diagram of the meter scale to represent the readings. The monitor switched the control on the survey meter from 0.1 X to 1.0 X scale. The monitor was then informed (by controller inject) that the readings were now 2,000 cpm. The monitor was aware that this was considered contamination as being well above background. The remaining survey points on the vehicle were verbalized through interview. The contamination was documented by the recorder on the Vehicle Contamination Survey Report.

The survey report form was placed in a plastic bag and left on the vehicle dashboard indicating the location of the contamination. The driver was instructed to move the vehicle to the designated area for contaminated vehicles. Although there were no cones or barrier tape utilized to designate between the contaminated and clean areas, the team member did escort the vehicle to the properly designated area. It was suggested after the drill to designate the areas by utilizing cones, barrier tape, or other visual means to help clearly designate the control areas and prevent any possible cross contamination or exposure.

A team member instructed the driver to put on shoe covers and asked the driver to step out of the vehicle. The team further instructed the driver not to touch anything to prevent possible cross contamination. The driver was then escorted to the personnel monitoring station.

Through interview the decontamination team was aware of the procedures for securing the contaminated vehicle. They also stated the internal monitoring procedures and were aware of key areas to be surveyed. According to procedure vehicle decontamination would only be performed under Louisiana Department of Environmental Quality (LDEQ) supervision.

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

- a. MET: 1.e.1, 3.a.1, 6.a.1, 6.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: 6.a.1.

ISSUE NO.: 70-09-6a1-A-03

CRITERION: Reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h., K.5.b)

CONDITION: The participants failed to follow procedures on two separate occasions during the demonstration. The first deviation from the procedure occurred when operational checks were performed on the survey meters. The participant did not test the instruments for correct response to a range of reading indicated on the calibration sticker of each survey meter. The second occurrence was when the decontamination team released an individual before conducting a full body survey.

POSSIBLE CAUSE: The participants failed to follow procedures.

REFERENCE: NUREG 0654 Criterion K.5.a

EFFECT: If proper operation checks had not been performed on survey instrument, participants would not know if the instrument could correctly measure levels contamination in order to determine if the levels were actually above twice background. This could result in allowing contamination to go unidentified allowing for the spread of contamination and increase of exposure. In addition, if the full body survey was not performed in accordance with procedures, the potential exists for contamination to go unnoticed allowing for the spread of contamination and increase of exposure.

CORRECTIVE ACTION DEMONSTRATED: In both cases, the individual who deviated from procedures received training and performed the task in accordance with procedures.

- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

## 4.2.2.2. Ochsner Clinic Foundation Hospital

### **Criterion 1.e.1:**

The equipment and supplies used for the 2009 Ochsner Medical Services (MS-1) Drill were sufficient and consistent with the needs of the staff. Supplies in the Radiation Emergency Area (REA) consisted of a decon area layout map, yellow and green tarps to cover the floor, step-off pad, vent covers for the air conditioning vent, floor plates to cover floor drains, basic medical supplies, gloves, masking tape, duct tape, caution tape, radiation barrier tape, radiation signs and drill signs, approximately 20 Thermoluminescent dosimeters (TLDs), about 20 pocket dosimeters calibrated September 2009 with a range of 0-200mR, barrels for contaminated liquid, waste bags and stand for non-liquid waste, warning signs, two Ludlum Model 3 survey meters with 44-9 pancake probes calibrated February 2009 with a range of reading sticker affixed, a Ludlum ASP-1 dose rate meter calibrated February 2009, three Potassium Iodide (KI) IOSAT blister packs containing fourteen tablets each with an expiration date of August 2013, radiation labels, and posting signs for layout maps and doffing procedures for removal of anti-contamination clothing.

The hospital staff began setting up the decon room to receive a contaminated injured patient at 0805 following the receipt of a notification call from the Waterford 3 Steam Electric Station. Access to the ambulance bay area, the decon room, and the buffer area were secured and floors were covered with colored tarps, yellow for contamination area and green for buffer area. The Control Point Attendant assigned dosimeters and TLDs to each member of the team who would enter the REA or buffer zone. The assignment of each TLD was recorded on the Personnel Dosimetry Log prior to distribution.

Each member of the team to enter the REA or Buffer zone also wore an anti-contamination suit, apron, head cover, mask with splash shield, shoe covers, and double gloves. Survey meters were checked for operability against a range of reading affixed to the side of the meter prior to use. The hospital was ready to receive the patient by 0830.

**Criterion 3.a.1:**

Ochsner Hospital staff successfully demonstrated the ability to provide direct reading and permanent record dosimetry during the MS-1 Drill on September 30, 2009. The Control Point Attendant used the Personnel Dosimetry Log to assign each member of the team a TLD and a direct reading dosimeter. Radiation limits were not specified in the hospital plans, but the direct reading dosimeter range was limited to 200mR and the Radiation Safety Officer did not feel that levels of contamination found on the patient were enough to cause exposures of up to 200 mR for the medical staff. At the conclusion of the drill, all TLDs and dosimeters were returned to the Control Point Attendant who recorded the final readings on the Personnel Dosimetry Log.

**Criterion 6.d.1:**

The transportation and treatment of the contaminated injured patient was successfully demonstrated at the Ochsner Clinic Foundation Hospital (OCFH). At 0800, a call was received by the Emergency Department (ED) Charge Nurse (CN) at OCFH from St. Charles Ambulance Service (SCAS). The caller stated that a contaminated injured patient was in route to OCFH with an estimated time of arrival (ETA) of twenty minutes. The caller also stated that the patient had a head injury, leg injury, and had contamination levels of 2000 counts per minute (cpm) on his clothing and 500 cpm on his injured leg under the clothing. This information was recorded by the CN on the Initial Notification Data Form. While a call-back telephone number was not documented, the CN stated that OCFH has a direct hotline to Waterford 3 that could be used to verify calls.

The CN then began using the Radiation Emergency Call Procedure (Diagram 1 in the OCFH Radiation Accident Plan) to notify OCFH response staff. The OCFH response staff includes ED Attending Physician, Physician Director of ED, Unit Director of ED, Radiation Safety Officer (RSO), alternate RSO, Administrative Coordinator (who in turn contacted Hospital Administration and Public Affairs), ED Nurse, and Security Officers.

The Radiation Emergency Area (REA) set-up team posted a diagram the Floor Plan of the REA (Diagram II in the OCFH Radiation Accident Plan). The diagram was used to layout the floor coverings (yellow Herculite for hot zone and green Herculite for buffer zone), step-off pad, stanchions, barrier rope, radiation warning signs, protective clothing removal instruction sign, thirty gallon waste fluid container, waste bag and stand for non-liquid waste, and treatment table. Survey meters were checked for operability against a range of reading from a known source.

The CN was notified at 834 that the ambulance had an ETA of approximately five minutes. While awaiting the patient arrival, the ED Attending Physician briefed the medical staff in the REA concerning the patient's status, medical procedures would take priority over radiological concerns, and that decontamination would be performed until survey meter readings were below 100 cpm. The patient arrived at 0835, was brought into the REA through the rear Emergency Medical Services (EMS) entrance, and was transferred from the ambulance gurney to the treatment table in the REA. The Waterford 3 Health Physics Technician (W-3 HP) that accompanied the patient in the ambulance briefed the REA on patient condition and contamination areas. The REA staff cut away the patient's clothing. The RSO instructed the REA staff to perform glove changes frequently. The REA staff rolled the patient to either side and removed his clothing from the treatment table. The RSO surveyed the patient while the ED Attending Physician assessed the patient. REA staff collected samples (nasal swab, blood, and urine) and checked the patient's vitals. REA staff the cut away the bandages from the patient's wounded leg. The RSO surveyed the wound area and found 500 cpm on the wound. The patient was rolled again, and the sheets and backboard were removed from the treatment table while the RSO surveyed the patient's back. REA staff performed a gross decon by spraying the patient's entire body with water. The patient's leg wound was sprayed with water. The RSO surveyed the wound and found 200 cpm. The leg wound was sprayed again, surveyed, and found to be 100 cpm. Decontamination was completed at that point.

A nurse then rolled a sheet of white Herculite from the Control Point at the buffer zone into the hot zone area. The white Herculite was used to allow a clean gurney to be rolled in for patient transfer from the treatment table. An OCFH Health Physics Technician (OCFH HP) surveyed the nurse's shoes for contamination and she was found to be clean. The patient was then transferred from the treatment table to the clean gurney. The gurney was surveyed by the OCFH HP and the patient was removed from the REA to be treated further at OCFH.

The W-3 HP swabbed the hot zone floor area and surveyed for contamination. The W-3 HP also performed the floor swab in the REA and ambulance area. REA staff read their dosimeters before handing dosimeters and TLDs to the Control Point Nurse. REA staff then removed their protective clothing according to the protective clothing removal instruction sign. REA staff members were then surveyed for contamination before being allowed to exit through the Control Point. The technique used during the first attempt at surveying staff as they exited the buffer zone was too fast and too far from the surface

to properly detect radiation. The controller provided training and the survey technique was re-demonstrated properly at a distance of about one inch moving about three inches per second.

During a post-drill interview, the RSO stated that the REA (including all Herculite floor covers and waste bags) would remain "as is" until Waterford 3 contractors arrived for removal and disposal.

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: 6.d.1.

ISSUE NO.: 70-09-6d1-A-01

CRITERION: 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)

CONDITION: The survey technique used when conducting exit surveys for hospital staff was not adequate. The monitor held the probe too far from the surface and moved too fast to detect the presence of contamination.

POSSIBLE CAUSE: The monitor needed additional training to perform the survey properly.

REFERENCE: NUREG-0654 K.5.a, K.5.b

EFFECT: Staff members could have exited the buffer zone with contamination potentially spreading contamination to other people or parts of the hospital and increasing exposure levels.

CORRECTIVE ACTION DEMONSTRATED: The drill controller provided training to the monitor on survey technique and the technique was re-demonstrated properly.

- c. DEFICIENCY: None

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

# APPENDIX 1

## ACRONYMS AND ABBREVIATIONS

CN	Charge Nurse
CPM	Counts Per Minute
DRD	Direct Reading Dosimeter
ED	Emergency Department
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EPZ	Emergency Planning Zone
EW	Emergency Worker
FEMA	Federal Emergency Management Agency
HP	Health Physicist
KFD	Kenner Fire Department
LPRRP	Louisiana Peacetime Radiological Response Plan
NRC	Nuclear Regulatory Commission
OCFH	Ochsner Clinic Foundation Hospital
OSL	Optically Stimulated Luminescent
RAC	Regional Assistance Committee
REA	Radiation Emergency Area
REP	Radiological Emergency Preparedness
RSO	Radiation Safety Officer

## APPENDIX 2

# DRILL EVALUATORS AND TEAM LEADERS

DATE: 2009-09-29, SITE: Waterford 3 Steam Electric Station, LA

LOCATION	EVALUATOR	AGENCY
St. Charles Ambulance Service	Brad DeKorte *Linda Gee	DHS/FEMA DHS/FEMA
Kenner Fire Department Emergency Worker Monitoring and Decontamination	Nan Calhoun Brad DeKorte Linda Gee *Tim Pflieger	DHS/FEMA DHS/FEMA DHS/FEMA DHS/FEMA
Ochsner Clinic Foundation Hospital	*Nan Calhoun Tim Pflieger	DHS/FEMA DHS/FEMA
* Team Leader		

STATE OF LOUISIANA  
OFFSITE SCENARIO  
FOR  
WATERFORD 3 STEAM ELECTRIC STATION  
September 29 & 30, 2009

Participating Organizations

KENNER FIRE DEPARTMENT  
OCHSNER MEDICAL CENTER  
ST. CHARLES HOSPITAL AMBULANCE SERVICE

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## **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 operations. (NUREG-0654, H.7; J.10.a, b, e; J.11; K.3.a)**

#### Locations

Kenner Fire Department, Ochsner Medical Center, St. Charles Ambulance Service

#### Extent of Play

Equipment, maps, displays, dosimetry, potassium iodide (KI) and other supplies will be demonstrated for use as they would in an actual emergency. This includes dosimetry and any protective gear worn or used by emergency workers.

Correction on the spot, at the discretion of and concurrence between the evaluator and the controller, may be acceptable at this location.

#### ARCAs

None

## **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

Kenner Fire Department, Ochsner Medical Center, St. Charles Ambulance Service

#### Extent of Play

Area dosimetry will be used in the radiological controlled area for the decontamination station.

Personnel at the Kenner Decontamination Station will wear simulated TLDs for the evaluation.

Personnel for the St. Charles Ambulance and Ochsner Medical Center will wear simulated TLDs for the evaluation.

Correction on the spot, at the discretion of and concurrence between the evaluator and the controller, may be acceptable at these locations.

#### ARCAs

None

### **EVALUATION AREA 6: SUPPORT OPERATIONS/FACILITIES**

#### **Sub-Element 6.a – Monitoring and Decontamination of Evacuees and Emergency Workers, and Registration of Evacuees**

**Criterion 6.a.1: The reception center/emergency worker facility has appropriate space, adequate resources, and trained personnel to provide monitoring, decontamination, and registration of evacuees and/or emergency workers. (NUREG-0654, J.10.h; J.12; K.5.a)**

#### Locations

Kenner Fire Department

#### Extent of Play

The Kenner staff will be notified alerted and mobilized by their respective notification points. A roster indicating 24-hour coverage for their facilities will be available, and a shift change will not be demonstrated at this location. A decontamination area will actually be set-up for the demonstration.

Correction on the spot, at the discretion of and concurrence between the evaluator and the controller, may be acceptable at this location.

#### ARCAs

None

#### **Sub-Element 6.b – Monitoring and Decontamination of Emergency Worker Equipment**

**Criterion 6.b.1: The facility/ORO has adequate procedures and resources for the accomplishment of monitoring and decontamination of emergency worker equipment, including vehicles. (NUREG-0654, K.5.b)**

## Locations

Kenner Fire Department

## Extent of Play

One emergency vehicle and one emergency worker will be monitored for contamination.

Controllers will interject data for a simulated contamination level for the emergency worker and vehicle. Emergency worker decontamination will be evaluated by demonstration and further discussion.

Correction on the spot, at the discretion of and concurrence between the evaluator and the controller, may be acceptable at this location.

## ARCAs

None

## **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

St. Charles Ambulance Service, Ochsner Medical Center

## Extent of Play

Ochsner Medical Center will be contacted. A simulated contaminated and injured person will be identified and transported by the St Charles EMS service.

Medical transportation will be staged at the Ochsner Medical Center at the beginning of the drill.

If the ambulance is not available due an actual medical emergency, transportation to the hospital will occur using a utility vehicle.

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, at the discretion of and concurrence between evaluator and controller, may be acceptable at this location.

ARCAs

None

**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.

STATE OF LOUISIANA  
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Schedule of Events

September 29 & 30, 2009

Tuesday, September 29, 2009

16:00 – 18:00 – Kenner Decontamination Station Demonstration

Wednesday, September 30, 2009

08:00 – 10:00 – Ochsner Hospital Demonstration

I. Situation

This drill will be conducted for the purpose of testing the ability of the following organizations to address an emergency at the Waterford 3 SES: Ochsner Medical Center and St. Charles Ambulance Service and the Kenner Fire Department Decontamination Station.

II. Summary of Events

Tuesday, September 29, 2009

At approximately 16:00, the Drill Control Team will notify the Kenner Fire Dispatch to notify the Kenner Emergency Worker Decontamination Station staff.

A simulated emergency worker is directed to the Kenner emergency worker decontamination station for evaluation. Upon arrival at the Kenner station, the emergency worker's car is found to be contaminated and is impounded.

When he is monitored, the emergency worker is found to be contaminated and undergoes decontamination procedures. After these procedures are performed, the emergency worker is found to be free of contamination and is dismissed.

Prior to the termination of the drill, a list of qualified replacement personnel will be made available. No shift change will take place.

Wednesday, September 30, 2009

At approximately 07:45, mechanical maintenance technician at Waterford 3, who has been working on the spent fuel crane in the Fuel Handling Building, slips and strikes his head on a crane support. He falls off the crane platform.

His safety harness breaks his fall, but he swings into the side of the spent fuel pool and fractures his left leg. He is unconscious and hanging by his safety harness. The lower part of his body is immersed in the Spent Fuel Pool water and is contaminated.

The Drill Control Team simulates the Control Room response and UNT-007-018, First Aid and Medical Care, is implemented. Response by the Emergency First Aid Team is simulated.

The patient is removed from the Spent Fuel Pool and primary surveys of the patient are performed. The patient is then transported to the PAP to await the ambulance response.

At 08:00, the Drill Control Team calls the Ochsner Medical Center to start the drill. The patient's primary survey information (vital signs) is provided and a request to St. Charles Hospital Ambulance Service is made to transport the patient to Ochsner Medical Center.

The Drill Control Team and the HP technician will provide radio updates to Ochsner during transportation of the patient.

At approximately 08:30, the ambulance will arrive at Ochsner Medical Center. The patient will be taken into the REA, decontaminated and treated for the simulated injuries. After the patient has been removed from the REA, the HP technician has surveyed and released the ambulance and the proper removal of protective clothing has been demonstrated, the medical drill will be terminated. A critique of the events will be conducted.

#### IV. Attachments

1. Exercise Timeline
2. Offsite Controller/Monitor Assignments

ATTACHMENT 1

TIMELINE

KENNER DECONTAMINATION STATION DEMONSTRATION

TIME	EVENT	DRILL ACTIVITY
9/29/09 15:45 T=-0:15	Drill preparations are made.	The Drill Control Team assembles at the Kenner FD.
16:00 T=0	Drill initiated by the Drill Control Team	Communications initiated from the Drill Control Team to Kenner Fire Dispatch. Kenner response personnel are notified.
16:15 T=+0:15	Responders report to the Decontamination Station	Responders are briefed, outfitted and begin set-up of the station.
16:30 T=+0:30	An emergency worker arrives at the Kenner Decontamination Station and monitoring procedures are initiated.	
16:35 T=+0:35 CC-1A CC-2A CC-2B CC-3A	The emergency worker vehicle is found to be contaminated.	Vehicle is moved to the impoundment area and the interior is surveyed. Vehicle remains in the impoundment area.
16:45 T=+0:45 CC-4A CC-4B CC-5A	An emergency worker is found to be contaminated.	Decontamination measures are initiated.
17:00 T=+1:00 CC-6A	The contaminated emergency worker is surveyed after decontamination procedures and is found to be clean.	The emergency worker is released.
17:30 T=+1:30	Decontamination Station personnel make available shift change information.	
18:00 T=+2:00	The drill is terminated.	

ATTACHMENT 2

TIMELINE

OCHSNER HOSPITAL DEMONSTRATION

TIME	EVENT	DRILL ACTIVITY
9/30/09 07:30 T=-0:30 CC-1	Drill preparations are made.	The Drill Control Team and an HP technician assemble at Ochsner Medical Center. The patient will be "made up" in the St. Charles Hospital Ambulance and the Drill personnel will be briefed.
08:00 T=0 CC-2	Drill initiated by the Drill Control Team.	The Drill Control Team notifies Ochsner Medical Center of the medical emergency and that St. Charles Hospital Ambulance Service has been requested to respond.
CC-3		If Ochsner Medical Center is unable to participate, the medical emergency drill will be terminated.
08:10 T=+0:10 CC-4 CC-5	St. Charles Ambulance departs W3 and establishes radio contact with Ochsner.	St. Charles Hospital Ambulance Service radios Ochsner that they have left W3 and ETA to the hospital is approximately 20 minutes.
08:20 T=+0:20 CC-6	St. Charles Ambulance updates ETA.	St. Charles Hospital Ambulance Service radios Ochsner that they are approximately 10 minutes from Ochsner. The patient's condition will not change while simulating transportation to Ochsner Medical Center.
08:30 T=+0:30 CC-7	Patient arrives at Ochsner Medical Center.	The patient is removed from the ambulance and taken to the REA. The hospital personnel decontaminate the patient and begin treatment of the injury.
CC-8	HP surveys the ambulance for contamination.	The ambulance is determined to be clean and is released.
CC-9	Drill terminated. Critique conducted.	When the patient is removed from the REA, the ambulance has been released and PC removal has been demonstrated, the drill will be terminated.

Kenner Decon Station Controller  
Kenner Decon Station Evaluator  
Kenner Decon Station Evaluator  
Kenner Decon Station Evaluator  
Medical Lead Controller  
Medical Controller  
Medical Monitor  
HP Technician

A. Ertel  
G. Gothard  
P. Auzenne  
D. Guidry  
Michael Huskey  
Donna Dawson  
Frank Davis  
Luke Schaubhut

# APPENDIX 5

## PLANNING ISSUES

### 1. Ochsner Clinic Foundation Hospital

ISSUE NO.: 70-09-6d1-P-02

CONDITION: Radiation Emergency Area staff decontaminated an individual using an action level not documented in the Ochsner Clinic Foundation Hospital Radiation Accident Plan.

POSSIBLE CAUSE: The Ochsner Clinic Foundation Hospital Radiation Accident Plan does not indicate an action level to perform decontamination.

REFERENCE: NUREG-0654 K.5.a

EFFECT: An individual could possibly not be fully decontaminated before being released, allowing contamination to be spread.

RECOMMENDATION: The LPRRP currently prescribes that, "Individuals will be surveyed for contamination in accordance with established procedures. Persons showing on their body a reading greater than 0.1 mR/hour above background on a survey meter, or persons setting off the alarm while surveyed with a portal monitor, will be considered contaminated, and will be processed through decontamination procedures." (LPRRP Rev. 10, Basic Plan, Chapter 9, Section IV.B.3). It is recommended that the LPRRP be modified to include an action level appropriate to the survey meter/probe combination in use for contamination surveys (such as the survey meters in use at the hospital) by specifying a count per minute reading (CPM) reading that would be closely equivalent to the 0.1 mR/hour reading that is currently specified in the LPRRP. The hospital (which uses a meter that reads in CPM) should then adopt the prescribed CPM reading as specified in the change to the LPRRP and include the action level into the hospital procedure.