



**FEMA**

August 24, 2009

SEP -2 2009

Mr. Elmo E. Collins, Jr.  
Regional Administrator  
U.S. NRC, Region IV  
612 E. Lamar Blvd, Suite 400  
Arlington, TX 76011-4005

Dear Mr. Collins:

Enclosed is a copy of the radiological emergency preparedness final report for the Waterford 3 Steam Electric Station Plume Exposure Pathway exercise evaluated on June 24, 2009. FEMA Region VI staff evaluated the Louisiana Governor's Office of Homeland Security and Emergency Preparedness, Louisiana Department of Environmental Quality, St. Charles Parish Emergency Operations Center, St. John the Baptist Parish Emergency Operations Center, Waterford 3 Emergency News Center, and WWL Radio 870-AM. There were no Deficiencies or Areas Requiring Corrective Action (ARCA) identified during this exercise.

Based on the results of the exercise, the off-site radiological emergency response plans and preparedness for the State of Louisiana and 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 offsite radiological emergency response plans and preparedness for the State of Louisiana-specific to Waterford 3 Steam Electric Station will remain in effect.

A copy of this report was forwarded to Ms. Lisa Gibney, REP HQ Branch Chief and HQ Project Officer, U. S. Nuclear Regulatory Commission, in Washington, D.C. Should you have questions, please contact me at (940) 898-5199, or Brad DeKorte, Radiological Emergency Preparedness Site Specialist for Waterford 3, at (940) 383-7304.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lisa R. Hammond".

Lisa R. Hammond  
RAC Chair

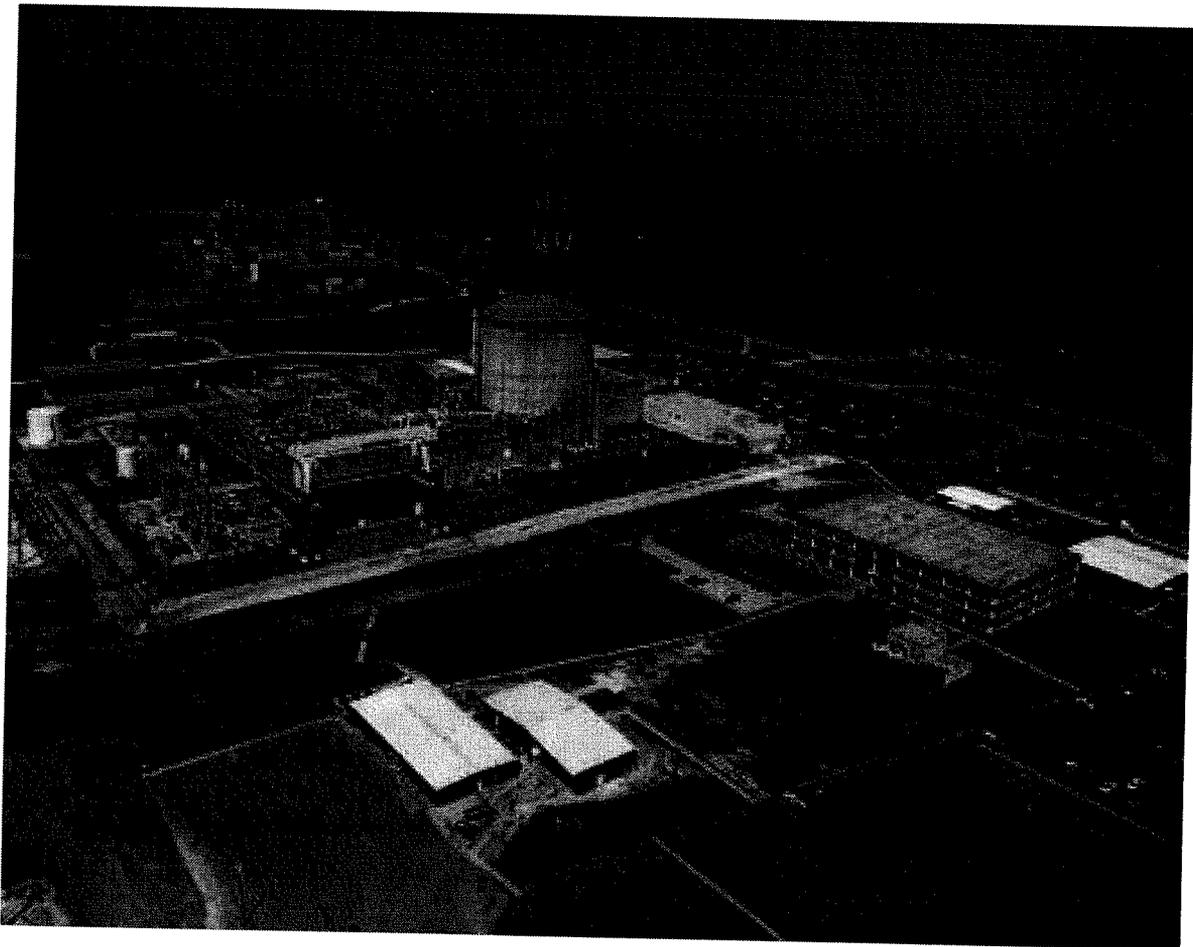
Enclosure

cc: NRC HQ-Lisa Gibney  
DHS/FEMA HQ-Vanessa Quinn  
DHS/FEMA HQ-Craig Fiore  
LDEQ - Jeffrey Meyers  
GOHSEP - Mark Cooper  
W 3 Entergy Ops. Inc.- Jack Lewis

Waterford 3 Steam Electric Station  
Exercise Report - 2009-06-24  
Final Report - Radiological Emergency  
Preparedness (REP) Program  
2009-08-25



**FEMA**





# FEMA

## Exercise Report

Waterford 3 Steam Electric Station

Exercise Date: 2009-06-24

Report Date: 2009-08-25

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 June 24, 2009, a biennial Radiological Emergency Preparedness (REP) exercise was conducted in the plume exposure pathway emergency planning zone (EPZ) around the Waterford 3 Steam Electric Station (W 3) located near Taft, St. Charles Parish, Louisiana. The U.S. Department of Homeland Security/Federal Emergency Management Agency (DHS/FEMA) Region VI Office, evaluated the exercise. The purpose was to assess the level of preparedness of state and local responders to react to a simulated radiological emergency at Waterford 3. This exercise was held in accordance with DHS/FEMA policies and guidance concerning the implementation of state and local radiological emergency preparedness plans and procedures.

The previous exercise at this site was a Plume Exercise conducted on December 5, 2007. The qualifying emergency preparedness exercise was conducted on February 8, 1984. There have been seventeen evaluated exercises, including the exercise on June 24, 2009, plus several drills conducted since 1984.

DHS/FEMA Region VI Office, wishes to acknowledge the efforts of the many individuals in the State of Louisiana, St. Charles Parish, St. John the Baptist Parish, and surrounding jurisdictions who participated in this exercise. Protecting the public health and safety is the full-time job of some of the exercise participants and an additional assigned responsibility for others. Still others have willingly sought this responsibility by volunteering to provide vital emergency services to their communities. Cooperation and teamwork of all the participants was evident during this exercise.

This report contains the final written evaluation of the biennial exercise. The state and local organizations, except where noted in this report, demonstrated knowledge of their emergency response plans and procedures and adequately implemented them. There were no Deficiencies, no Plan Issues and no Areas Requiring Corrective Action (ARCA) identified during this exercise.

## 2. Introduction

On December 7, 1979, the President directed the Federal Emergency Management Agency (FEMA) to assume the lead responsibility for all offsite nuclear planning and response. FEMA's activities under the REP Program, which 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 was 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 exercise report is to present the exercise 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).

Section 3 of this report, entitled "Exercise Overview," presents basic information and data relevant to the exercise. This section of the report contains a description of the plume and ingestion pathway EPZs, a listing of all participating jurisdictions and

functional entities that were evaluated, and a tabular presentation of the time of actual occurrence of key exercise events and activities.

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

This section contains data and basic information relevant to the June 24, 2009, exercise to test the offsite emergency response capabilities in the area surrounding Waterford 3. This section of the exercise report includes a description of the plume pathway EPZ, a listing of all participating jurisdictions and functional entities that were evaluated, and a tabular presentation of the times of actual occurrence of key exercise events and activities.

### 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 west-northwest 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. Exercise Participants

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

### State Jurisdictions

- Louisiana Governor's Office of Homeland Security and Emergency Preparedness
- Louisiana Department of Environmental Quality
- Louisiana State Police
- Louisiana Department of Health and Hospitals
- Louisiana Department of Agriculture and Forestry
- Louisiana Department of Corrections
- Louisiana Department of Justice
- Louisiana Department of Social Services
- Louisiana Department of Transportation and Development
- Louisiana Department of Wildlife and Fisheries
- Louisiana Workforce Commission

### Risk Jurisdictions

- St. Charles Parish Department of Homeland Security & Emergency Preparedness
- St. Charles Parish Fire Department
- St. Charles Sheriff Department
- St. Charles Parish Hospital/Medical Services
- St. Charles Parish School Board
- St. Charles Public Works
- St. John the Baptist Office of Homeland Security & Emergency Preparedness
- St. John the Baptist Parish Fire Department
- St. John the Baptist Parish Sheriff Department
- St. John the Baptist School Services
- St. John the Baptist Parish Public Works

### Private Jurisdictions

- Entergy Operations, Inc.
- WWL Radio 870-AM

### 3.3. Exercise Timeline

Table 1 presents the time at which key events and activities occurred during the Waterford-3 Steam Electric Station exercise on June 24, 2009.

Table 1 - Exercise Timeline  
DATE: 2009-06-24, SITE: Waterford 3 Steam Electric Station, LA

Emergency Classification Level or Event	Time Utility Declared	GOHSEP EOC	LDEQ HQ	LDEQ EOP	W3 ENC	St. Charles EOC & T/ACP	St. John the Baptist EOC & T/ACP
Unusual Event	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alert	0817	0823	0826	0826	0823	0825	0826
Site Area Emergency	1040	1054	1102	1102	1040	1052	1054
General Emergency	1255	1310	1256	1256	1255	1307	1310
Simulated Rad. Release Started	1241	1250	1243	1243	1251	1246	1247
Simulated Rad. Release Terminated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Facility Declared Operational		0843	0840	1139	0940	0859	0854
Declaration of State of Emergency		1230				1055	0920
Exercise Terminated		1430		1418	1418	1420	1419
1st Protective Action Decision: Evacuate response areas A1, B1, C1, D1, A2, C2 and shelter all remaining response areas						1331	1331
1st Siren Activation						1340	1340
1st EAS or EBS Message						1342	1342
KI Administration Decision:		1325		1321		1340	1343

**Table 1 - Exercise Timeline**  
**DATE: 2009-06-24, SITE: Waterford 3 Steam**  
**Electric Station, LA**

Emergency Classification Level or Event	Time Utility Declared	WWL
Unusual Event	N/A	
Alert	0817	
Site Area Emergency	1040	
General Emergency	1255	
Simulated Rad. Release Started	1241	
Simulated Rad. Release Terminated	N/A	
Facility Declared Operational		
Declaration of State of Emergency		
Exercise Terminated		
1st Protective Action Decision: Evacuate response areas A1, B1, C1, D1, A2, C2 and shelter all remaining response areas		
1st Siren Activation		
1st EAS or EBS Message		1342
KI Administration Decision:		

## 4. Exercise 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 June 24, 2009, exercise evaluation to test the offsite 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 agreement for this exercise is included as an appendix to this report.

### 4.1. Summary Results of Exercise 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 exercises)

D - Deficiency assessed

A - ARCAs assessed or unresolved ARCAs from previous exercises

P - Planning Issue

N - Not Demonstrated



## 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 offsite emergency preparedness is not adequate to provide reasonable assurance that

appropriate protective measures can be taken in the event of a radiological emergency to protect the health and safety of the public living in the vicinity of a nuclear power plant."

An ARCA is defined 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, ARCAs, and Planning Issues 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 Code.

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, P = Planning Issue).

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

## 4.2.1. Louisiana Jurisdictions

### 4.2.1.1. Governor's Office of Homeland Security and Emergency Preparedness

- a. MET: 1.c.1, 1.d.1, 2.b.1, 2.b.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

#### 4.2.1.2. Louisiana Department of Environmental Quality Headquarters

- a. MET: 1.c.1, 1.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

#### 4.2.1.3. Louisiana Department of Environmental Quality EOF

- a. MET: 1.c.1, 1.d.1, 2.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

#### 4.2.1.4. Waterford 3 Emergency News Center

- a. MET: 1.a.1, 1.d.1, 1.e.1, 5.b.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. Risk Jurisdictions

### 4.2.2.1. St. Charles Parish Emergency Operations Center and Traffic/Access Control Point

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

### 4.2.2.2. St. Charles Parish School Board

- a. MET: 3.a.1, 3.c.2.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

### 4.2.2.3. St. John the Baptist Parish Emergency Operations Center and Traffic/Access Control Point

- a. MET: 1.a.1, 1.c.1, 1.d.1, 1.e.1, 2.a.1, 2.b.2, 2.c.1, 3.a.1, 3.b.1, 3.d.1, 3.d.2, 5.a.1, 5.a.3, 5.b.1.
- b. AREAS REQUIRING CORRECTIVE ACTION: None
- c. DEFICIENCY: None
- d. NOT DEMONSTRATED: None
- e. PRIOR ISSUES - RESOLVED: None
- f. PRIOR ISSUES - UNRESOLVED: None

## 4.2.3. Private Jurisdictions

#### 4.2.3.1. EAS Radio Station WWL

- a. MET: 5.a.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

## ACRONYMS AND ABBREVIATIONS

AAC	Accident Assessment Coordinator
ACP	Access Control Point
ALARA	As Low As Reasonably Achievable
ANS	Alert Notification System
ARCA	Areas Requiring Corrective Action
DAC	Dose Assessment Coordinator
EAD	Electronic Alerting Dosimeters
EAS	Emergency Alert System
ECL	Emergency Classification Level
ENC	Emergency News Center
EOC	Emergency Operations Center
EOF	Emergency Operations Facility
EPA	Environmental Protection Agency
EPZ	Emergency Planning Zone
ESF	Emergency Support Function
EW	Emergency Workers
FEMA	Federal Emergency Management Agency
FMT	Field Monitoring Team
GE	General Emergency
GOHSEP	Governor's Office of Homeland Security and Emergency Preparedness
HOO	Headquarters Operations Officer
LC	Logistics Coordinator
LDEQ	Louisiana Department of Environmental Quality
LE	Law Enforcement
NRC	Nuclear Regulatory Commission
OM	Operations Manager
PAD	Protective Action Decision
PAR	Protective Action Recommendations
PAS	Protective Action Section
PEP	Primary Entry Point
PIO	Public Information Officer
PVDRC	Plantation Volunteer District Radio Club
RAC	Regional Assistance Committee
REP	Radiological Emergency Preparedness
RO	Radiological Officer
RPT	Radiation Protection Technicians
SAE	Site Area Emergency
SEC	Secretary Designee
SEL	Senior EOF Liaison
SEOC	State Emergency Operations Center
SHO	State Health Officer
SO	Senior Officer
SOP	Standard Operating Procedure

TCP	Traffic Control Point
TEDE	Total Effective Dose Equivalent
TLD	Thermo-Luminescent Dosimeter
TR	Technical Representative
UCG	Unified Command Group

## APPENDIX 2

### EXERCISE EVALUATORS AND TEAM LEADERS

DATE: 2009-06-24, SITE: Waterford 3 Steam Electric Station, LA

LOCATION	EVALUATOR	AGENCY
Governor's Office of Homeland Security and Emergency Preparedness	Ernie Boaze *James Hickey	ICF ICF
Louisiana Department of Environmental Quality Headquarters	Ernie Boaze	ICF
Louisiana Department of Environmental Quality EOF	*Nan Calhoun	DHS/FEMA
Waterford 3 Emergency News Center	*Bill Bischof Tim Pflieger	DHS/FEMA DHS/FEMA
St. Charles Parish Emergency Operations Center and Traffic/Access Control Point	Linda Gee *Al Lookabaugh Bill Maier	DHS/FEMA ICF NRC
St. Charles Parish School Board	Linda Gee	DHS/FEMA
St. John the Baptist Parish Emergency Operations Center and Traffic/Access Control Point	Bill George *Mike Goldsworthy Cherie Kittle Sam Williams	DHS/FEMA DHS-FEMA Dept. of Transportation FEMA Region 6
EAS Radio Station WWL	*Carl McCoy	ICF
* Team Leader		

# APPENDIX 3

# Waterford-3 SES

## Extent of Play

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### 2009

**Revision 6**  
**5/18/09**

**EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT**

**Sub-element 1.a – Mobilization**

**Criterion 1.a.1: OROs use effective procedures to alert, notify, and mobilize emergency personnel and activate facilities in a timely manner. (NUREG-0654, A.4; D.3, 4; E.1, 2; H.4)**

Locations

Emergency News Center (ENC), St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

ARCAs        None

**EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT**

**Sub-element 1.c - Direction and Control**

**Criterion 1.c.1: Key personnel with leadership roles for the ORO provide direction and control to that part of the overall response effort for which they are responsible. (NUREG-0654, A.1.d; A.2.a, b)**

Locations

State EOC, LDEQ HQ, LDEQ EOF, St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

ARCAs        None

**EVALUATION AREA 1: EMERGENCY OPERATIONS MANAGEMENT**

**Sub-element 1.d – Communications Equipment**

**Criterion 1.d.1: At least two communication systems are available, at least one operates properly and communication links are established and maintained with appropriate**

**locations. Communications capabilities are managed in support of emergency operations. (NUREG-0654, F.1, 2)**

Locations

State EOC, LDEQ HQ, LDEQ EOF, ENC, St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

Note: Communications may be made with the LDEQ Environmental Radiation Laboratory for the purpose of meeting the communication needs of other players. However, the Radiation Laboratory will not be evaluated in this exercise.

ARCAs        None

**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

ENC, St. Charles Parish EOC & T/ACP, St. John the Baptist Parish EOC & T/ACP

Extent of Play

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted. Correction-on-the-spot at Parish EOC's are limited to areas outside the EOC operations area (i.e., emergency worker briefings and issue of dosimetry in other rooms).

ARCAs        None

**EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING**

**Sub-element 2.a – Emergency Worker Exposure Control**

**Criterion 2.a.1: OROs use a decision-making process, considering relevant factors and appropriate coordination, to insure that an exposure control system, including the use of KI, is in place for emergency workers including provisions to authorize radiation exposure in excess of administrative limits or protective action guides. (NUREG-0654, K.4; J.10.e, f)**

Locations

St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

If the scenario does not warrant a discussion on either the authorization to administer KI or emergency worker (EW) exposure exceeding administrative limits, then the criteria shall be accomplished through an interview with the evaluator. Note: Parish decision-makers receive recommendations for KI and EW exposure from the State EOC.

ARCAs        None

**EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING**

**Sub-element 2.b. - Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency**

**Criterion 2.b.1: Appropriate protective action recommendations are based on available information on plant conditions, field monitoring data, and licensee and ORO dose projections, as well as knowledge of on-site and off-site environmental conditions. (NUREG-0654, I.8, 10 and Supplement 3)**

Locations

State EOC, LDEQ EOF

Extent of Play

The LDEQ EOF controller will interject simulated field monitoring data to the Dose Assessment Coordinator for the purpose of dose projection validation and verification through back calculations.

ARCAs        None

**EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING**

**Sub-element 2.b. - Radiological Assessment and Protective Action Recommendations and Decisions for the Plume Phase of the Emergency**

**Criterion 2.b.2: A decision making process involving consideration of appropriate factors and necessary coordination is used to make protective action decisions (PAD) for the general public (including the recommendation for the use of KI, if ORO policy). (NUREG-0654, J.9; J.10.f, m)**

Locations

State EOC, St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

According to the State of Louisiana's policy, KI is not considered for the general public.

ARCAs        None

**EVALUATION AREA 2: PROTECTIVE ACTION DECISION-MAKING**

**Sub-element 2.c - Protective Action Decisions Consideration for the Protection of Special Populations**

**Criterion 2.c.1: Protective action decisions are made, as appropriate, for special population groups. (NUREG-0654, J.9; J.10.d, e)**

Locations

St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

Special facilities include schools, hospitals, nursing homes, and jails located within the 10-mile EPZ. Lists of these facilities are identified in Parish procedures.

KI can be considered as an option for those special facilities (excluding schools) whose populations are not able to evacuate immediately.

If the scenario does not warrant a discussion on protective action decisions for the protection of special populations, then the criteria shall be accomplished through an interview with the evaluator.

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

St. Charles Parish EOC & T/ACP, St. Charles Parish School Board, St. John the Baptist Parish EOC & T/ACP

#### Extent of Play

Group dosimetry will be used in both Parish EOCs. Group dosimetry will be an option for field operations. TLDs will be available for all exercise participants.

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted. Correction-on-the-spot at Parish EOC's are limited to areas outside the EOC operations area (i.e., emergency worker briefings and issue of dosimetry in other rooms).

#### ARCAs

None

### **EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION**

#### **Sub-element 3.b. – Implementation of KI Decision**

**Criterion 3.b.1 – KI and appropriate instructions are available should a decision to recommend use of KI be made. Appropriate record-keeping of the administration of KI for emergency workers and institutionalized individuals is maintained. (NUREG-0654, J.10.e)**

Locations

St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

If the scenario does not warrant a discussion on the administration of KI to emergency workers and institutionalized individuals, then the criteria shall be accomplished through an interview with the evaluator.

ARCAs

None

**EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION**

**Sub-element 3.c. – Implementation of Protective Actions for Special Populations**

**Criterion 3.c.2 – OROs/School officials implement protective actions for schools. (NUREG-0654, J.10.c, d, g)**

Locations

St. Charles Parish School Board

Extent of Play

The activity will be done out of sequence. For the exercise, one school, as determined by the EOC, will be notified by telephone to demonstrate this objective.

For purposes of this exercise, no students will be moved as part of this exercise. The school bus may be directed to the nearest reception center under police escort.

Bus personnel will be notified by School Board personnel as they would be in an actual emergency.

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted. Correction on-on-the-spot at Parish EOCs are limited to areas outside the EOC operations area, i.e., emergency worker briefings and issue of dosimetry in other rooms.

ARCAs        None

**EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION**

**Sub-element 3.d. – Implementation of Traffic and Access Control**

**Criterion 3.d.1: Appropriate traffic and access control is established. Accurate instructions are provided to traffic and access control personnel. (NUREG-0654, J.10.g, j)**

Locations

St. Charles Parish T/ACP, St. John the Baptist Parish T/ACP

Extent of Play

This criterion may be demonstrated out-of-sequence. T/ACP maps will be available at the Parish EOCs. Actual demonstration will be made by an EW at a location agreed upon with an evaluator.

Equipment and dosimetry will be demonstrated as in an actual emergency.

TACP personnel will be able to demonstrate the ability to locate traffic and access control points in their general area, the location of reception centers to which the public will be directed and the emergency worker decontamination station to which they would report at the conclusion of their mission.

If the scenario does not warrant this discussion at a location, the controller will inject data to stimulate a discussion.

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted. Correction-on-the-spot at Parish EOC's are limited to areas outside the EOC operations area (i.e., emergency worker briefings and issue of dosimetry in other rooms).

ARCAs        None

**EVALUATION AREA 3: PROTECTIVE ACTION IMPLEMENTATION**

**Sub-element 3.d. – Implementation of Traffic and Access Control**

**Criterion 3.d.2: Impediments to evacuation are identified and resolved. (NUREG-0654, J.10.k)**

Locations

St. Charles Parish T/ACP, St. John the Baptist Parish T/ACP

Extent of Play

Controller interject may be used to initiate the demonstration for this criterion, and this activity may be conducted out-of-sequence.

Resources to assist with the removal of impediments are identified in Parish procedures.

Correction-on-the-spot will be considered at these locations at the discretion of and concurrence between the evaluator and the controller. Caution should be exercised to insure that exercise play is not interrupted. Correction-on-the-spot at Parish EOC's are limited to areas outside the EOC operations area (i.e., emergency worker briefings and issue of dosimetry in other rooms).

ARCAs      None

**EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION**

**Sub-element 5.a – Activation of the Prompt Alert and Notification System**

**Criterion 5.a.1: Activities associated with primary alerting and notification of the public are completed in a timely manner following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. The initial instructional message to the public must include as a minimum the elements required by current FEMA REP guidance. (10 CFR Part 50, Appendix E.IV.D & NUREG-0654, E.5, 6, 7)**

Locations

St. Charles Parish EOC, St. John the Baptist Parish EOC, WWL Radio Station

Extent of Play

Following the decision to activate the alert and notification system, activation procedure will be demonstrated up to the point of activation. The siren activation will be simulated.

Upon receipt of the message, the radio station official will demonstrate the procedure to broadcast the message. The message will be read to the evaluator, but will not be broadcast.

The initial message sent to the radio station (and simulated broadcast) will be the only message timed.

ARCAs      None

**EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION**

**Sub-element 5.a – Activation of the Prompt Alert and Notification System**

**Criterion 5.a.3: Activities associated with FEMA approved exception areas (where applicable) are completed within 45 minutes following the initial decision by authorized offsite emergency officials to notify the public of an emergency situation. Backup alert and notification of the public is completed within 45 minutes following the detection by the ORO of a failure of the primary alert and notification system. (NUREG-0654, E.6, Appendix 3.B.2.c)**

Locations

St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

One St. John Parish exception area will be demonstrated. The alerting along this route will be simulated. The alert message will be demonstrated to the evaluator's satisfaction prior to the actual demonstration of the alert route.

The demonstration of this element may be performed prior to the actual scenario event sequence with the permission of the evaluator.

ARCAs      None

**EVALUATION AREA 5: EMERGENCY NOTIFICATION & PUBLIC INFORMATION**

**Sub-element 5.b – Emergency Information and Instructions for the Public and the Media**

**Criterion 5.b.1: OROs provide accurate emergency information and instructions to the public and the news media in a timely manner. (NUREG-0654, E.5, 7; G.3.a, G.4.c)**

Locations

ENC, St. Charles Parish EOC, St. John the Baptist Parish EOC

Extent of Play

Utility, State and Parish representatives will demonstrate the ability to provide emergency information and instructions to the public consistent with the scenario. News media will not be present. Selected personnel will simulate the role of reporters asking questions during briefings. Controllers will inject public phone team messages, media phone team messages and news briefing messages.

Rumor control will be demonstrated at the ENC.

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.

# APPENDIX 4

**STATE OF LOUISIANA  
OFFSITE SCENARIO  
FOR  
WATERFORD 3 STEAM ELECTRIC STATION  
June 24, 2009**

**Participating Organizations**

**State of Louisiana  
St. Charles Parish  
St. John the Baptist Parish**

## Narrative Summary

### I. Situation

This exercise will be conducted for the purpose of testing the ability of the following organizations to address an emergency at the Waterford 3 SES: The State of Louisiana through the Louisiana Department of Environmental Quality and the Office of Emergency Preparedness; St. Charles Parish; and St. John the Baptist Parish.

### II. Objectives

The objectives for offsite activities are listed in Attachment 1.

### III. Summary of Events

The sequence of events hypothesized in this exercise package is provided to test the integrated emergency response capability of organizations established to protect the public should an actual emergency occur. In order to achieve a sequence of events that will mobilize these emergency organizations in fulfillment of the objectives of this exercise, the scenario must contain incredible plant situations, unlikely equipment failures and failure sequences, and improbable operator actions. It is stressed that offsite personnel (e.g. the public) should not be misled into believing that an event causing the radiological consequences postulated by this scenario could occur. The following is a summary of these events:

#### A. Initial Conditions

The plant is operating at 100% power for the past 450 days and is toward the end of core life. RCS Boron is 180 ppm. BAMT 'A' is at 5850 ppm. BAMT 'B' is at 5725 ppm. ESI is +0.03. Steam Generator #1 has a tube leak of 1.5 gpd. The 'AB' Bus is aligned to the 'B' side. Safety Index is 10.0. Protected Train is 'A'. The Operations Spotlight issues are (will be taken from actual Operations turnover data). Approximately 100-200 gallons of PMU addition will be required to maintain 100% power over the next 12 hours. The sky is cloudy and scattered thunderstorms are predicted for Southeastern Louisiana. St. John the Baptist Parish is currently under a Severe Thunderstorm Warning and a Tornado Watch. St. Charles Parish is currently under a Severe Thunderstorm Watch.

OP-901-521, Severe Weather and Flooding subsection E1 has been implemented and is complete to step 8.0. Flooding is not anticipated on the Nuclear Plant Island at this time. Currently there is no precipitation. Waste Tank 'A' is on recirc due high suspended solids.

B. Summary of Events

At 07:55, the exercise will commence.

At 08:05, wind speed increases significantly, and at 08:10 a tornado strikes in the area of the Turbine Building causing structural damage to the southwest exterior portion of the Turbine Building. The Outside Watch notifies the Control Room that a tornado has damaged the Turbine Building.

Activation of the TSC at the backup location is not an objective of this Exercise. If the Control Room Envelop is still in the recirc mode, then a contingency cue card will be issued to bring the Control Room out of isolate to allow normal staffing of the TSC. The SM/EC declares an ALERT based on EP-001-001, Recognition and Classification of Emergency Conditions Initiating Condition (IC) HA6, EAL #2, "Natural and destructive phenomena affecting the plant VITAL AREA" EP-001-020, Alert is implemented. The emergency condition is announced to station personnel. The Onsite (TSC & OSC), Nearsite (EOF), and Offsite (ENC) Emergency Organizations are mobilized. The Corporate Emergency Center (CEC) is mobilized and staffed. State and local government agencies, Waterford 1 & 2 and the NRC are notified. There are no Protective Action Recommendations (PARs) required at this time.

At 08:35 Annunciator CP-36, Cabinet 'L', Window L-3, WASTE TANKS ROOM SUMP LEVEL HI is received in the Control Room. The Control Room should refer to Annunciator Response Procedure and dispatch an NAO to investigate the problem with the Waste Management System. The NAO observes local indication on the Waste Management Panel that Waste Tank 'A' level is decreasing and the in service Waste Tank 'B' is increasing. The NAO enters the Waste Tank Pump Room to investigate the problem with the waste tank. Upon entering Waste Tank Pump 'A' room, he observes a leak on the outlet flange of Waste Tank Pump 'A'. Water is running onto the floor and into the sump. The pump should be secured and Radiation Protection actions implemented to mitigate the spread of contamination. Preparation should be made to repair the leaking pipe flange.

At 09:05, the "B" Turbine Building Component Cooling Water (TCCW) Pump will trip, causing the backup TCCW pump to start. This will not pose a serious problem at this time. When the loss of power on the "B" side occurs, later in the scenario, the loss of TCCW will cause the instrument air and station air compressors to heat up if the "A" TCCW

pump has not been restored to service or potable water hooked up to air compressors.

At 09:40, Annunciator CP-2, Cabinet H, Window L-5, REACTOR PWR CUTBACK SINGLE CHANNEL TROUBLE is received. I & C personnel should be notified to troubleshoot the Reactor Power Cutback System. Once it is determined that the Cutback System is not functional, the Control Room personnel should refer to OP-004-015, Reactor Power Cutback System. Loss of Turbine Trip and Loss of Load trip should be enabled.

At 09:55, annunciator CP-1, Cabinet E, Window B-3, Turbine Thrust Bearing Excessive Wear alarms. The Control Room staff should obtain maintenance/engineering assistance and determine the alarm is due to an annunciator card failure.

At 10:35, a generator Excitation system failure results in a Main Generator trip. On the trip the 'B' OCB is slow to open, Offsite Power is lost, the Reactor trips, Startup Transformer 'A' Motor Operated Disconnect opens on Sudden Pressure relay action due to voltage spike. Both Emergency Diesel Generators start, but the 'A' EDG trips on Generator Differential and the 'B' EDG trips on Overspeed. This results in a Station Blackout. After approximately fifteen minutes the EC or EOF Director, declares a Site Area Emergency based on Emergency Plan Implementing Procedure EP-001-001, Recognition and Classification of Emergency Conditions, SS1, "Loss of all offsite power and loss of all onsite AC power to essential busses, EAL #1." There are no PARs required for this declaration. The Emergency Coordinator selects an offsite assembly area and announces a site evacuation. The Assembly Area Supervisor is dispatched and Security performs accountability in accordance with EP-002-190, Personnel Accountability. For the purposes of this drill, the personnel in the Protected Area will evacuate to the station parking lots and a small number of pre-designated personnel will evacuate to the selected offsite assembly area.

If not already performed, transfer of responsibilities for command and control, offsite does assessment and communications from the TSC to the EOF will be initiated.

A Nuclear Auxiliary Operator should be dispatched to investigate the 'A' and 'B' EDGs. The NAO will find that EDG 'A' tripped on Generator Differential and will be unavailable for the duration of the drill. Once it is recognized that an overspeed trip has occurred on the 'B' EDG, then the overspeed trip should be reset and the diesel restarted to power up the 'B' side safety bus.

At approximately 11:25, an RCS leak occurs at approximately 60 gpm.

At approximately 11:45, EFW Pump 'A/B' trips on overspeed due to the trip lever arm being out of adjustment. The trip lever may be reset by a mechanical repair team or the NAO.

At approximately 12:10, a large break Loss of Coolant Accident is initiated releasing radioactive primary coolant into the Containment.

At approximately 12:40, Containment penetration #23 fails, releasing radioactivity into the annulus. As annulus pressure increases, the Shield Building Ventilation System will cycle between recirculation and exhaust to control the annulus at a negative pressure. This results in a release to the atmosphere via the plant stack.

When the Containment failure is identified, the EOF Director declares a General Emergency based on Emergency Plan Implementing Procedure EP-001-001, Recognition and Classification of Emergency Conditions, FG1 (EAL's FCB4/FCB1, RCB1/RCB3 and CNB4/CNB6), "Loss of ANY two Barriers AND Loss or Potential Loss of Third barrier " OR, AG1, EAL's #2 or #3, "Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 1000 mR TEDE or 5000 mR CDE Thyroid for the actual or projected duration of the release using actual meteorology". The minimum Protective Action Recommendation (PAR) at a General Emergency is for evacuating Protective Response Areas A1, B1, C1, D1 (2 - mile radius) and A2 and C2 (5 miles downwind) and sheltering all remaining protective response areas.

At 13:10, the 'B' Component Cooling Water pump trips on overcurrent due to faulty phase 'C' relay that is repairable. The 'AB' Component Cooling Water Pump should be aligned to replace the 'B' CCW Pump or Emergency Diesel Generator 'B' will eventually trip due to overheating.

At 13:15 the wind direction changes and is now coming from 55 degrees. Due to the wind shift, the PARs will change to evacuating Protective Response Areas A1, B1, C1, D1 (2 - mile radius) and A2, C2 and D2 (5 miles downwind) and sheltering all remaining protective response areas. State and local government agencies, Waterford 1&2 and the NRC are notified.

When, in the opinion of the Lead Controller, the exercise objectives have been demonstrated and continuing the exercise will provide no additional benefit, the exercise will be terminated. The Lead Controller will coordinate the termination of the exercise with the State Controllers to ensure ample opportunity has been provided to demonstrate the offsite objectives. When the exercise is terminated, area critiques will begin.

## METEOROLOGICAL SCENARIO OUTLINE AND DATA

The meteorological scenario selected for the Waterford 3 SES June Evaluated Exercise has been prepared to meet the overall objectives of the drill.

The meteorological scenario assumes the following:

- At 8:45, due to a tornado condition, wind from southeast (140 degrees) at approximately 40 miles per hour at the meteorological towers and moderately unstable meteorological conditions (Stability Class B) until 9:05.
- At 10:00, the wind is from the southeast (140 degrees) at 6.7 miles per hour and slightly stable meteorological conditions (Stability Class E).
- At 13:15, the wind shifts from the southeast (55 degrees) at 6.7 miles per hour and slightly stable meteorological conditions (Stability Class E) for the remainder of the exercise.

The choice of this meteorology provides for the desirable measurable levels of radiation downwind to meet offsite objectives.

The meteorological data presented in this section includes:

1. Simulated general forecasts from the National Weather Service
2. Simulated computer printouts from the plant's meteorological system.