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W3F1-2010-0079

November 3, 2010

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Response to NRC Request for Additional Information Regarding Waterford 3 Exemption Request, TAC No. ME4016
Waterford Steam Electric Station, Unit 3 (Waterford 3)
Docket No. 50-382
License No. NPF-38

References:
1. Entergy letter dated May 27, 2010 Waterford 3 Exemption Request Regarding "10 CFR 26 Subpart I – Managing Fatigue" for Situations Related to Hurricane Conditions (ADAMS Accession No. ML101520325) (W3F1-2010-0045)
2. NRC Email dated October 10, 2010 "Waterford 3 Exemption Request, TAC No. 4016, Request for Additional Information" (ADAMS Accession No. ML102780336) (ILN10-0103)

Dear Sir or Madam:

On October 10, 2010, Entergy received communication (Reference 2) from the NRC requesting additional information associated with the submittal of Waterford 3's Exemption Request Regarding "10 CFR 26 Subpart I – Managing Fatigue" for Situations Related to Hurricane Conditions (Reference 1).

Attachment 1 contains Entergy's response to the NRC requests. Also enclosed are copies of the requested procedures and supporting documents.

There are no new commitments contained in this letter.

A001
NRR

Please contact William J. Steelman at (504) 739-6685 if you have questions regarding this information.

Sincerely,

WJS/RJP/ssf

Attachment 1: Response to the NRC Request for Additional Information Regarding Waterford 3's exemption request to "10 CFR 26 Subpart I – Managing Fatigue" for Situations Related to Hurricane Conditions (TAC No. ME4016)

Enclosures:
EN-EP-301, EP Assessment of Offsite Emergency Response Capability following a Natural Disaster
EN-EP-309, Fatigue Management for Hurricane Response Activities
EN-EP-601, Corporate Support During Classified Emergencies
EN-EP-602, Corporate Support During Off-Normal Situations
EN-EP-605, Corporate Incident Response Team
ENS-EP-302, Sever Weather Response
ENS-EP-303, Severe Weather Recovery
ENS-EP-608, Storm Center Interface
EN-OM-123, Fatigue Management Program
EP-001-001, Recognition and Classification of Emergency Conditions
PL-108, Emergency Management Policy

cc: (w/enclosures)
U. S. Nuclear Regulatory Commission
Attn: Mr. N. Kalyanam
Mail Stop O-07D1
Washington, DC 20555-0001

Louisiana Department of Environmental Quality
Office of Environmental Compliance
Surveillance Division
P. O. Box 4312
Baton Rouge, LA 70821-4312

(w/o enclosures)
Mr. Elmo E. Collins, Jr.
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U. S. Nuclear Regulatory Commission
Region IV
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NRC Senior Resident Inspector
Waterford Steam Electric Station Unit 3
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Attachment 1

W3F1-2010-0079

Response to the NRC Request for Additional Information Regarding Waterford 3's exemption request to "10 CFR 26 Subpart I – Managing Fatigue" for Situations Related to Hurricane Conditions (TAC Number ME4016)

Response to Request for Additional Information (ML102780336)

1. In Section 3 of the Proposed Exemption, paragraph two states that Entergy has hurricane readiness and response procedures. Please provide these procedures and all supporting documents.

   RESPONSE:

   The following documents are being forwarded as requested:

   EN-EP-301, EP Assessment of Offsite Emergency Response Capability following a Natural Disaster
   EN-EP-309, Fatigue Management for Hurricane Response Activities
   EN-EP-601, Corporate Support During Classified Emergencies
   EN-EP-602, Corporate Support During Off-Normal Situations
   EN-EP-605, Corporate Incident Response Team
   ENS-EP-302, Sever Weather Response
   ENS-EP-303, Severe Weather Recovery
   ENS-EP-608, Storm Center Interface
   EN-OM-123, Fatigue Management Program
   EP-001-001, Recognition and Classification of Emergency Conditions
   PL-108, Emergency Management Policy

   (Note that ENS-EP-302 contains the most substantial discussion on Waterford 3's severe weather response.)

   If additional documentation or sub-references are needed, please call Jim Pollock, Waterford 3 Licensing staff at (504) 739-6561.

2. Also mentioned in Section 3 paragraph two of the exemption request, please provide the fleet procedure EN-EP-309, "Fatigue Management for Hurricane Response Activities".

   RESPONSE:

   EN-EP-309, "Fatigue Management for Hurricane Response Activities" is forwarded with this response.

3. Under the Administrative Controls subheading in Section 3, what is the reference used to justify the specific procedure guidance that address site-wide announcements, pre-established schedules and bunking? Please provide the reference.

   RESPONSE:

   The guidance that addresses site-wide announcements, pre-established schedules, and bunking is based on previous Waterford 3 experience with sequestering for Hurricanes.

Waterford 3 has had to sequester for Hurricanes on several occasions since plant operation began. Lessons learned from those Hurricane threats and events have been captured and incorporated into Waterford 3 procedures. For example, the action to minimize site-wide announcements to support restorative rest was formally implemented from a lesson learned during sequestering for Hurricane Gustav. Actions regarding site-wide announcements, pre-established schedules, and bunking are addressed in Attachment 9.2 of procedure ENS-EP-302, which has been provided with this response.

4. Section 4 of the exemption request mentions not modifying activities being performed that assure safe operation and maintaining the security of the facility. How is fatigue management addressed in these activities?

RESPONSE:

The statement was provided to confirm Waterford 3's determination that the requested exemption will not endanger life or property or the common defense and security. Waterford 3 needed to verify this condition prior to pursuing the exemption since this is one of the required provisions in 10 CFR 26.9 for NRC approval.

The statement intended to convey that there was no change in the methods used to operate the plant <u>that could</u> create a new accident or affect a previously analyzed accident or release path. It also intended to convey that the exemption does not change the security activities implemented at Waterford 3.

The discussion in the remainder of section 4 was provided to further discuss the assurance of plant operation and security. It can be surmised that approval of the exemption itself facilitates assurance of safe operation and security of the facility.

Fatigue management during the exemption period is addressed in procedure EN-EP-309, Fatigue Management for Hurricane Response Activities. Key features of managing fatigue are:

- The exemption proposed allowance period applies only to work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d). All other fitness-for-duty requirements for managing fatigue, such as self-declarations and fatigue assessments would remain in effect.

- Site Management and personnel covered by the fatigue rule in accordance with NMM procedure EN-OM-123 are responsible for complying with work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d) to the extent possible, even under fatigue rule exemption conditions.

- It is expected that Management and Supervision will continue their inherent, oversight roles in monitoring workers for fatigue.

- With the staffing levels provided in ENS-EP-302, there will be sufficient numbers of management and supervision available to provide oversight for plant operating

conditions and in monitoring the effects of fatigue such that the public health and safety is adequately protected.

5. Section 4 of the exemption request states that sufficient numbers of management and supervision will be available to ensure that the public health and safety is adequately protected. Please describe the roles and duties of the management and supervision that will be performing these duties.

RESPONSE:

Procedure ENS-EP-302, Severe Weather Response, Attachment 9.2 contains details of management and supervisory roles associated with Waterford 3's response to severe weather. These duties ensure implementation of the approved Emergency Plan which has been prepared explicitly to ensure that the public health and safety is protected.

Roles and duties of management and supervision applicable to this exemption request includes monitoring for fatigue in the covered workers delineated in 10 CFR 26.4(a)(1) through (a)(5). Procedure EN-EP-309, Fatigue Management for Hurricane Response Activities indicates that "Site Management and personnel covered by the fatigue rule in accordance with NMM procedure EN-OM-123 are responsible for complying with work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d) to the extent possible, even under fatigue rule exemption conditions. Site Management and personnel are expected to comply with all other fitness-for-duty requirements for managing fatigue, such as self-declarations and fatigue assessments." In tandem with this procedural direction, it is expected that Management and Supervision will continue their traditional roles in monitoring workers for fatigue.

With the staffing level provided in ENS-EP-302, there will be sufficient numbers of management and supervision available to provide oversight for plant operating conditions and in monitoring the effects of fatigue such that the public health and safety is adequately protected.

6. The exemption request mentions onsite relief personnel and bunking accommodations that will be in effect through the duration of the proposed exemption. What is the defined work schedule and restorative rest time for personnel using these designated bunk areas?

RESPONSE:

Procedure EN-EP-309, Fatigue Management for Hurricane Response Activities states that "duty schedules will be developed prior to sequestering that will provide personnel who are not performing duties an opportunity for rest during site preparation and sequestering conditions. The schedules should be as synchronized as possible to minimize disturbances in the established sleeping areas."

Procedure ENS-EP-302, Severe Weather Response, Attachment 9.2 generally establishes a 12 hour on-duty schedule comprised of a day shift and a night shift. Supporting this two shift schedule, plant pages are to be minimized outside the hours of 0500 – 0700 hours and 1700 – 1900 hours.

Site briefing of Hurricane Responders is described in procedure ENS-EP-302, Attachment 9.2 by use of a checklist that includes "Management Expectations." One of the expectations is that responders are to "sleep when off duty." It is expected that both the day shift and night shift will have ample opportunity for sleep before their next duty period.

7. Given the event that personnel are being sequestered under the requested exemption, how will management ensure those individuals are not fatigued on the first day reporting back to work after the proposed exemption is exited?

RESPONSE:

Management will ensure individuals are not fatigued on the first day reporting back to work after the proposed exemption is exited per procedure EN-EP-309, Fatigue Management for Hurricane Response Activities. Procedure EN-EP-309 requires "relief crews are available to restore normal shift rotation" and "all administrative controls described in EN-OM-123 used for implementing the requirements of 10 CFR 26.205(c) and (d) are required to be resumed at this time."

The minimum day-off requirement described in 10 CFR 26.205(d)(3) will be considered reset and the forward work schedules will be designed to meet the minimum day-off requirements.

Individual fatigue assessments will be performed as required by the program to ensure individuals are not fatigued on the first day reporting back to work after the proposed exemption is exited. Also note that self declaration of fatigue is an additional barrier implemented by procedure EN-OM-123, Fatigue Management Program.

8. Please provide a breakdown of the various job duty groups and numbers of individuals in each group who will be sequestered.

RESPONSE:

Procedure ENS-EP-302, Severe Weather Response provides a breakdown of the various job duty groups and numbers of individuals in each group who will be sequestered. The numbers are provided for two cases; case 1 is for Tropical Storm or Category 1 Hurricane and case 2 is for Category 2 or higher Hurricane. There is also staffing numbers given for supplemental staff needed for site preparation. These staffing levels are provided in Attachment 9.2 on sheets 6 and 7 of 49.

9. Please clarify if the exemption request is for sequestered individuals performing storm related functions and not for discretionary maintenance or the direction of discretionary maintenance that a risk informed evaluation process has determined to be significant to the public health and safety referenced by 10 CFR 26.4(4).

RESPONSE:

The exemption will only apply to individuals involved in Hurricane response activities who perform duties identified in 10 CFR 26.4(1) through (5). The exemption is not for discretionary maintenance or the direction of discretionary maintenance. The exemption is for work necessary to maintain the plant in a safe and secure condition, or to protect equipment required for safety or power generation from potential storm damage.

10. What criteria will be used to understand that sufficient relief crews are available to restore normal shift rotation?

RESPONSE:

Procedure EN-EP-309, Fatigue Management for Hurricane Response Activities places responsibility on the Site VP (or designee) to determine when sufficient relief crews are available to restore normal shift rotation. Waterford 3 utilizes watch bills to monitor compliance with the fatigue rule requirements. Capability to restore normal shift rotation would be ascertained via restoration of the watch bill process.

Enclosures

W3F1-2010-0079

EN-EP-301, EP Assessment of Offsite Emergency Response Capability following a Natural Disaster

EN-EP-309, Fatigue Management for Hurricane Response Activities

EN-EP-601, Corporate Support During Classified Emergencies

EN-EP-602, Corporate Support During Off-Normal Situations

EN-EP-605, Corporate Incident Response Team

ENS-EP-302, Sever Weather Response

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ENS-EP-608, Storm Center Interface

EN-OM-123, Fatigue Management Program

EP-001-001, Recognition and Classification of Emergency Conditions

PL-108, Emergency Management Policy

Entergy	NUCLEAR MANAGEMENT MANUAL	NON-QUALITY RELATED	EN-EP-301	REV. 2
		REFERENCE USE	PAGE 1 OF 17	

Emergency Planning Assessment of Offsite Emergency Responses Capability Following a Natural Disaster

Procedure Contains NMM REFLIB Forms: YES ☒ NO ☐

Effective Date	Procedure Owner:		Governance Owner:	
12/26/07	**Title:** Manager, EP **Site:** WPO	Nicholas Avrakotos	**Title:** Director, EP **Site:** WPO	Michael Slobodien

Exception Date*	Site	Site Procedure Champion	Title
	ANO	Robert Holeyfield	Manager, EP
N/A	BRP	N/A	
	GGNS	Milton Guynn	Manager, EP
	IPEC	Brian Sullivan	Manager, EP
	JAF	Peter Cullinan	Manager, EP
	PLP	Judith Ford	Manager, EP
	PNPS	Thomas Sowdon	Manager, EP
	RBS	Joseph Leavines	Manager, EP
	VY	Mary Ann Wilson	Manager, EP
	W3	James Lewis	Manager, EP
	ECH	Myra Jones	EP Project Manager
	WPO	Alain Grosjean	EP Project Manager

Site and NMM Procedures Canceled or Superseded By This Revision

Process Applicability Exclusion: All Sites: ☐
Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☒ JAF ☒ PLP ☒ PNPS ☒ RBS ☐ VY ☒ W3 ☐ NP ☐

Change Statement

This is an editorial revision. This revision makes the procedure effective at Palisades on April 18, 2007.

*Requires justification for the exception

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1.0 PURPOSE

[1] This procedure governs activities of Emergency Planning (EP) Department personnel.

[2] This procedure provides guidance on assessing the capability of offsite emergency response organizations to respond to site emergencies following the passage of natural disasters or area blackouts directly or indirectly affecting the site's 10-mile Emergency Planning Zone (EPZ).

[3] This procedure does not supersede the requirements of any other plant procedure. It provides additional guidance specific to the requirements for confirming offsite emergency response capabilities following the passage of natural disasters.

[4] Site procedures may be used in lieu of this administrative procedure if the procedure provides site-specific details.

[5] This procedure details the evaluation of the infrastructure associated with the radiological emergency preparedness program that FEMA must complete before the restart of a reactor after a natural disaster or area blackout. Licensee personnel will assist to complete the FEMA Post Disaster Checklist in order to facilitate this evaluation.

2.0 REFERENCES

[1] Nuclear Management Manual Procedure LI-102, Corrective Action Process

[2] Code of Federal Regulations 10CFR50

[3] NUREG-0654. FEMA-REP-1

[4] NRC Administrative Letter 97-03: Plant Restart Discussions Following Natural Disasters

[5] NRC Information Notice 93-54: Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned

[6] NRC Information Notice 93-53 Supplement 1: Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned

[7] NRC Inspection Manual, Chapter 1601: Communication Protocol for Assessing Offsite Emergency Preparedness Following a Natural Disaster

[8] NRC Inspection Manual, Chapter 0305: Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems

[9] FEMA document Post-Natural Disaster Assessment of Off-Site Preparedness

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

[1] The Emergency Planning Manager (EPM) at each site, or designee, is responsible for the implementation of this procedure and the following tasks:

- Making contact with offsite officials following the passage of a natural disaster or area blackout to determine their status and emergency response capability.
- Ensuring Attachment 9.1, Offsite Post-Disaster Emergency Response Checklist, is completed following the passage of a natural disaster or area blackout.
- Assisting State officials in preparing a certification letter to FEMA confirming the ability of offsite emergency response organizations to respond to a site emergency.
- Participate in and/or support the Special Evaluation Teams, comprised of FEMA Regional staff and Regional Assistance Committee Chairs, State and Local governments, in determining the status of offsite response capabilities.
- Writing Condition Reports for any conditions that may need site action to correct (i.e.: sirens not functional, offsite hotlines are not working, etc.)

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

None

5.2 GENERAL DETAILS

[1] Immediately following the passage of a natural disaster or area blackout, the EPM at the affected site, or designee, will contact the applicable organizations to determine the effect of the disaster on their response capabilities:

- Parish, Town or Count Emergency Management Office
- State Emergency Management Office

- State Public Health or Radiation Protection Office

[2] The EPM at the affected site will designate members of the site staff to assist with the completion of Attachment 9.1 which is from a FEMA document Reference [9]. This attachment will assist in determining the ability of offsite agencies to respond to a site emergency. These actions include:

(a) Determine status of backup offsite communications. Work with IT, as needed, for repairs.

(b) Determine availability of News Media personnel.

(c) Assign personnel to perform visual inspection of each siren for damages.

(d) Identify any non-functional sirens. Tabulate number of sirens operational. Calculate the percentage of total sirens available within the EPZ. Determine reason for outage (e.g., power outage, mechanical failure, major/minor damage, completely destroyed.) Identify sirens on backup power. Work with appropriate support groups to develop action plans for restoring inoperable sirens. Test individual sirens following repairs.

(e) Determine status of power outages within 10-mile EPZ and expected date for complete of power restoration within the EPZ.

(f) Establish priority for siren power restoration with Transmission and Distribution or local power company.

(g) Evaluate need to perform rotation and growl test of individual sirens with an observer at reach siren location.

(h) Determine if the News Media Center is available, is powered from primary or backup power, and if the building is structurally sound for occupancy.

(i) Determine status of News Media Center equipment.

(j) Verify evacuation route(s) accessibility. Revise evacuation time estimates based upon revised/re-routed evacuation routes, if necessary.

(k) Interview Operations concerning operability of instrumentation/equipment needed to support Emergency Action Levels and operability of Emergency Response Data System (ERDS).

(l) Interview Environmental personnel concerning normal environmental sampling equipment.

(m) Restore meteorological monitoring capabilities as applicable.

(n) Verify operability and availability of communication equipment (i.e., ENS, ERDS, State/Local Hot line).

(o) Verify operability and availability of plant communication equipment (i.e., Plant radios, plant phones, satellite phones).

(p) Conduct pager test for Emergency Response Organization personnel.

(q) Interview Letter of Agreement Agencies in the Radiological Emergency Plant to verify their capability to support.

(r) Interview County/Parish/Town Emergency Management personnel concerning capability to support the site.

(s) Interview State Emergency Management personnel concerning support capabilities.

(t) Evaluate need to provide liaison to County /Parish/Town Emergency Operation Center.

(u) Record results of assessment on Attachment 9.1.

(v) Forward the assessment results to the appropriate State Emergency Management officials.

[3] Following the completion of Attachment 9.1, the EPM at the affected site will work with State Officials to develop a letter of certification to the Federal Emergency Management Agency. This letter will confirm the ability of offsite agencies to respond to site emergencies should they occur.

[4] The EPM at the affected site will designate members of the site staff to establish and maintain an assessment of onsite emergency preparedness and restart or continued operation capabilities to support NRC Resident Inspector activities and communications as outlined in NRC Manual Chapter 1601.

6.0 INTERFACES

None

7.0 RECORDS

[1] The checklists used are maintained in the site Emergency Procedure files for information only.

8.0 SITE SPECIFIC COMMITMENTS

None

9.0 ATTACHMENTS

9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

POST DISASTER ASSESSMENT OF OFF-SITE CAPABILITIES

Disaster:	Date of Assessment:

Site:	**Location:**

Estimated EPZ Population Evacuated: _____
Estimated Time for allowing evacuees to return: _____
Did this disaster cause catastrophic damage in the 10-mile EPZ? **YES** ☐ **NO** ☐
[Note: Catastrophic damage would include the destruction of roads, bridges, buildings, communication systems, transportation resources and/or other infrastructure]

If yes, please refer to the attached Special Addendum for a Catastrophic Event to review population shifts and evacuation routes. Obtain schedules for the repair of the infrastructure and analyze the schedule for its impact on State and/or local government's ability to protect the health and safety of the population in the 10-mile EPZ. Identify compensatory measures planned and implement.

EMERGENCY RESPONSE FACILITY:

PRIMARY ACTIVITY – FACILITY	**YES**	**NO**	**N/A**
IS THE FACILITY:			
OPERATIONAL	☐	☐	☐
STRUCTURALLY SAFE	☐	☐	☐
OPERATING ON PRIMARY POWER	☐	☐	☐
IF OPERATING ON BACKUP POWER			
ESTIMATED SCHEDULE FOR RESTORATION OF PRIMARY POWER:			
NUMBER OF DAYS OF FUEL ON SITE:			

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 2 of 10

PRIMARY ACTIVITY – COMMUNICATION	YES	NO	N/A
ARE THE FOLLOWING SYSTEMS AVAILABLE:			
DEDICATED LINES			
HOT RING DOWN FROM THE PLANT (SELECTIVE SIGNALING)	☐	☐	☐
DECISION/ADMINISTRATIVE LINE (DECISION LINE)	☐	☐	☐
COMMERCIAL TELEPHONE	☐	☐	☐
CELLULAR TELEPHONE	☐	☐	☐
SATELLITE COMMUNICATIONS (IF APPLICABLE)	☐	☐	☐
STATE/LOCAL GOVERNMENT RADIOS	☐	☐	☐
AMATEUR RADIO	☐	☐	☐
INTERNET ACCESS	☐	☐	☐
OTHER COMMUNICATION SYSTEMS:	☐	☐	☐
If any of these systems are inoperative, please obtain a schedule for repair and also discuss the contingency plans for communication.			
COMMENTS			

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 3 of 10

PRIMARY ACTIVITY – EMERGENCY RESPONSE ORGANIZATION	YES	NO	N/A
AS SPECIFIED IN THE PLANS ARE THE FOLLOWING GROUPS/INDIVIDUALS AVAILABLE:			
ELECTED OFFICIALS OR OTHER DECISION-MAKERS	☐	☐	
EMERGENCY RESPONSE ORGANIZATION			
EMERGENCY MANAGEMENT	☐	☐	
PUBLIC INFORMATION OFFICERS	☐	☐	
LAW ENFORCEMENT PERSONNEL	☐	☐	
FIRE/RESCUE PERSONNEL	☐	☐	
EMS/MEDICAL PERSONNEL	☐	☐	
PUBLIC WORKS	☐	☐	
EDUCATION OFFICIALS - ARE SCHOOLS IN EPZ – OPEN ☐ OR CLOSED ☐	☐	☐	
SOCIAL SERVICES	☐	☐	
HEALTH	☐	☐	
AGRICULTURE	☐	☐	
OTHER DEPARTMENTS AND/OR AGENCIES			
AMERICAN RED CROSS	☐	☐	☐

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 4 of 10

	YES	NO	N/A
AMATEUR RADIO	☐	☐	☐
OTHER NON-GOVERNMENTAL VOLUNTEER ORGANIZATIONS:			
PRIVATE ORGANIZATIONS:			
PRIMARY ACTIVITY – PUBLIC ALERT AND NOTIFICATION	**YES**	**NO**	**N/A**
ALERT SYSTEM – SIREN SYSTEM			
TOTAL # OF SIRENS ; # OF SIRENS OPERATIONAL: _____			
PERCENTAGE OF SIRENS AVAILABLE: %			
SIRENS ON BATTERY BACKUP POWER	☐	☐	☐
SIREN RESTORATION AND TESTING PLAN (ATTACH) EXPECTED COMPLETION DATE			
EAS STATIONS AVAILABLE –[PRIMARY POWER _☐_] [BACKUP POWER _☐_]	☐	☐	☐

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 5 of 10

	YES	NO	N/A
AVAILABILITY OF NOAA AND/OR OTHER TONE ALERT RADIOS	☐	☐	☐
AVAILABILITY OF OTHER LOCAL TV AND RADIO STATIONS LIST STATIONS:	☐	☐	☐
CABLE INTERRUPT CAPABILITY ; _____% OF SERVICE IN EPZ	☐	☐	☐
STATUS OF LOCAL TELEPHONE SERVICE	☐	☐	☐
TDD AND OTHER DEVICES FOR SPECIAL NEEDS POPULATIONS	☐	☐	☐
POWER OUTAGES:			
PERCENTAGE OF EPZ POPULATION WITHOUT POWER %?			
ESTIMATED RESTORATION SCHEDULE			
BACK-UP ROUTE ALERTING			
NUMBER OF ROUTES FOR EPZ:			
EQUIPMENT AVAILABLE	☐	☐	☐
PERSONNEL AVAILABLE – ORGANIZATIONS RESPONSIBLE ACCORDING TO PLAN	☐	☐	☐
SIGNS (BOTH INFORMATION AND EVACUATION ROUTE MARKERS) ARE SIGNS PERMANENTLY PLACED? – NUMBER MISSING?	☐	☐	☐
REPLACEMENT SIGNS AVAILABLE	☐	☐	☐
IF NO, NUMBER DAYS TO GET REPLACEMENTS:			
JOINT INFORMATION CENTER – AVAILABLE - PRIMARY ☐ OR BACKUP ☐ POWER	☐	☐	

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 6 of 10

PRIMARY ACTIVITY – SPECIAL NEEDS AND TRANSPORTATION RESOURCES	YES	NO	N/A
ARE SPECIAL NEEDS FACILITIES IN THE EPZ, EXCLUDING SCHOOLS, OPEN	☐	☐	☐
HAVE SCHOOLS, INCLUDING LICENSED DAYCARE CENTERS, REOPENED	☐	☐	☐
HAS THE DISASTER IMPACTED THE ABILITY TO PROVIDE TRANSPORTATION RESOURCES	☐	☐	☐
IF YES			
HAS THE GOVERNMENT INSTITUTED COMPENSATORY MEASURES [ATTACH PLAN]	☐	☐	
PRIMARY ACTIVITY – EVACUATION ROUTES	**YES**	**NO**	**N/A**
EVACUATION ROUTES			
OPEN – UNRESTRICTED ACCESS	☐	☐	
IF NO:			
WERE ANY ROADS OR BRIDGES DESTROYED OR OTHERWISE INACCESSIBLE [IF YES SEE CATASTROPHIC APPENDIX]	☐	☐	
ESTIMATE OF POPULATION IMPACTED BY EVACUATION ROUTE PROBLEM:			
ANY LANES PASSABLE, IF SO NUMBER OF LANES:			
CAPACITY REDUCED: %; EVACUATION TIME INCREASE:			
REROUTING OF TRAFFIC: EVACUATION TIME INCREASE:			
PUBLIC INFORMATION ON CHANGES TO EVACUATION ROUTES	☐	☐	☐
ESTIMATED TIME FOR RESTORATION OF PLANNED EVACUATION ROUTES:			

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 7 of 10

PRIMARY ACTIVITY – ACCIDENT ASSESSMENT	YES	NO	N/A
PERSONNEL AVAILABLE TO PERFORM DOSE ASSESSMENT CALCULATIONS	☐	☐	
PERSONNEL AVAILABLE FOR FIELD MONITORING TEAMS	☐	☐	
PERSONNEL AVAILABLE FOR LABORATORY OPERATIONS	☐	☐	
PERSONNEL AVAILABLE FOR SAMPLE TRANSPORT, AND OTHER SUPPORT FUNCTIONS	☐	☐	☐
EQUIPMENT			
EQUIPMENT FOR FIELD MONITORING	☐	☐	
EQUIPMENT FOR MOBILE LABORATORY	☐	☐	
POWER FOR MOBILE LABORATORY	☐	☐	☐
COMMUNICATIONS TO ALL FIELD ELEMENTS	☐	☐	
ACCESS TO MONITORING LOCATIONS			
FIELD TEAMS HAVE UNRESTRICTED ACCESS TO MONITORING AND SAMPLING LOCATIONS	☐	☐	☐
IDENTIFY ALTERNATE MEANS TO REACHING MONITORING/SAMPLING LOCATIONS	☐	☐	

PRIMARY ACTIVITY – SUPPORT SERVICES	YES	NO	N/A
RECEPTION CENTER (EVACUEE MONITORING)			
PLANNED FACILITY AVAILABLE	☐	☐	
STAFF AVAILABLE TO OPERATE FACILITY	☐	☐	
EQUIPMENT AVAILABLE	☐	☐	

ATTACHMENT 9.1 OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 8 of 10

	YES	NO	N/A
EMERGENCY WORKER DECONTAMINATION			
PLANNED FACILITY AVAILABLE	☐	☐	
STAFF AVAILABLE TO OPERATE FACILITY	☐	☐	
EQUIPMENT AVAILABLE	☐	☐	
TEMPORARY CARE FACILITY			
PLANNED FACILITY AVAILABLE	☐	☐	
STAFF AVAILABLE TO OPERATE FACILITY	☐	☐	
EQUIPMENT AVAILABLE	☐	☐	
HOSPITAL			
IS THE HOSPITAL DESIGNATED TO TREAT RADIOLOGICALLY CONTAMINATED PATIENTS OPEN	☐	☐	☐
AREAS REQUIRING FOLLOW-UP			
1.			
2.			
3.			
4.			
5.			
COMPENSATORY MEASURES IN EFFECT			
1.			
2.			
3.			

SPECIAL ADDENDUM FOR CATASTROPHIC EVENT

CATASTROPHIC IMPACT – POPULATION SHIFTS	YES	NO	N/A
DISASTER RELATED POPULATION CHANGES IN THE EPZ	☐	☐	
TEMPORARY (INCREASE OR DECREASE) AFTER REENTRY	☐	☐	
ESTIMATED INCREASE IN EPZ POPULATION:			
TEMPORARY HOUSING AREAS DEVELOPED IN EPZ	☐	☐	☐
DEVELOPED NOTIFICATION PROCEDURES (ATTACH PROCEDURES)	☐	☐	
IDENTIFIED RESOURCES TO ASSIST WITH EVACUATION, IF NEEDED	☐	☐	
PLANS DEVELOPED FOR TRANSPORT DEPENDENT POPULATION	☐	☐	
PERMANENT CHANGE IN POPULATION	☐	☐	☐
GREATER THAN 10% OF TOTAL	☐	☐	

CATASTROPHIC IMPACT – EVACUATION ROUTES	YES	NO	N/A
ROADS DESTROYED AND NEGATIVE IMPACT ON EVACUATION	☐	☐	
REROUTING OF EVACUATION TRAFFIC	☐	☐	
IMPACT ON EVACUATION TIMES			

ATTACHMENT 9.1 — OFFSITE POST-DISASTER EMERGENCY RESPONSE CHECKLIST

Sheet 10 of 10

	YES	NO	N/A
BRIDGES			
PROBLEMS WITH BRIDGES	☐	☐	
IF YES,			
IDENTIFY LOCATION OF BRIDGE(S):			
BRIDGE(S) CLOSED	☐	☐	☐
DAMAGE MINOR AND ACCESSIBLE	☐	☐	
DAMAGE MAJOR AND NON-ACCESSIBLE	☐	☐	
NON-FUNCTIONING DRAWBRIDGE	☐	☐	☐
IMPACT ON EVACUATION ROUTES:			
PUBLIC ALLOWED ACCESSED TO AREA SERVED BY DAMAGED BRIDGE	☐	☐	
ALTERNATIVE METHODS FOR CROSSING WATERWAYS	☐	☐	
SCHEDULE FOR REVISING EVACUATION TIME ESTIMATE, IF NEEDED:			
AREAS REQUIRING FOLLOW-UP			
1.			
2.			
3.			
COMPENSATORY MEASURES IN EFFECT			
1.			

Fatigue Management For Hurricane Response Activities

Procedure Contains NMM REFLIB Forms: YES ☐ NO ☒

Effective Date	Procedure Owner: Title: Site:		Governance Owner: Title: Site:	
05/27/2010		Nick Avrakotos Sr. Manager, EP Projects HQN		Mike Slobodien Director, Emergency Programs HQN

Exception Date*	Site	Site Procedure Champion	Title
N/A	ANO	N/A	Manager, EP
N/A	BRP	N/A	Manager, EP
N/A	GGNS	N/A	Manager, EP
N/A	IPEC	N/A	Manager, EP
N/A	JAF	N/A	Manager, EP
N/A	PNPS	N/A	Manager, EP
N/A	PLP	N/A	Manager, EP
N/A	RBS	N/A	Manager, EP
N/A	VY	N/A	Manager, EP
	W3	Greg Fey	Manager, EP
	HQN	Jack Lewis	EP Project Manager

Site and NMM Procedures Canceled or Superseded By This Revision

Process Applicability Exclusion: All Sites: ☐

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☒

Change Statement

This is a new procedure to provide guidance for application of the fatigue rule and relief from its requirements under hurricane threat conditions. At present this procedure only applies to Waterford 3 because of that site's geographical location.

*Requires justification for the exception

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1.0 PURPOSE

[1] This procedure provides guidance for implementing fatigue management requirements for hurricane response activities for work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d).

2.0 REFERENCES

[1] 10CFR26.205, Managing Fatigue, Work Hours

[2] 10CFR26.207, Managing Fatigue, Waiver and Exceptions

[3] 10CFR50, Appendix E, Emergency Planning and Preparedness for Production and Utilization Facilities

[4] NUREG-0654, Rev.1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants

[5] NRC Enforcement Guidance Memorandum EGM-09-008, September 24, 2009

3.0 DEFINITIONS

[1] Hurricane: A tropical cyclone in the Atlantic, Caribbean Sea, Gulf of Mexico, or eastern Pacific, which the maximum 1-minute sustained surface wind is 64 knots (74 mph) or greater.

[2] Hurricane Warning: An announcement that hurricane conditions (sustained winds of 74 mph or higher) are expected somewhere within the specified coastal area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds.

[3] Hurricane Watch: An announcement that hurricane conditions (sustained winds of 74 mph or higher) are possible within the specified coastal area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours in advance of the anticipated onset of tropical-storm-force winds.

[4] Inland Hurricane Warning: Issued for interior counties that sustained winds of 74 mph or greater associated with a hurricane are expected within 24 hours.

[5] Inland Hurricane Watch: Issued for interior counties when sustained winds of 74 mph or greater associated with a hurricane are possible within 36 hours.

4.0 RESPONSIBILITIES

[1] The Manager, Emergency Preparedness or designee at each site is responsible for implementation of this procedure as part of preparation for and response to a potential hurricane condition as described in this procedure.

[2] The Vice President, Operations or designee at each site is responsible for decision making regarding fatigue rule exemption allowance period entry and exit and sequestering of site personnel.

[3] Site Management and personnel covered by the fatigue rule in accordance with NMM procedure EN-OM-123 are responsible for complying with work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d) to the extent possible, even under fatigue rule exemption conditions. Site Management and personnel are expected to comply with all other fitness-for-duty requirements for managing fatigue, such as self-declarations and fatigue assessments.

5.0 DETAILS

5.1 FATIGUE RULE DISCUSSION

[1] 10CFR26.207(d) states that licensees need not comply with the fatigue rule requirements as embodied in 10CFR26.206.25(c) and (d) during declared emergencies. Hurricane conditions may result in declared emergencies, but associated preparations and response occur much earlier than actual impact to the site and entry into the Emergency Plan. In addition, it is possible for the Emergency Plan to be exited for such severe weather conditions while the impact to surrounding infrastructure may preclude timely relief of personnel sequestered on site. Entergy and the NRC recognize this condition. The NRC has allowed for enforcement discretion to the rule provided in EGM-09-008 (Reference 5).

5.2 FATIGUE RULE COMPLIANCE

NOTE

This procedure does not provide "blanket approval" for any failure to comply with fatigue rule requirements during declared emergencies. The goal for site responders is to be in fatigue rule exempt conditions for work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d) for as short a time as possible.

[1] To the extent possible, maintain compliance with the fatigue rule during preparation for and response to hurricane conditions.

(a) Potential fatigue rule schedule conflicts should be considered when assigning personnel to site preparation and response teams.

(b) **WHEN** personnel are to be sequestered on site, **THEN** arrangements for onsite reliefs and bunking shall be made in order to allow for a sufficient period of restorative sleep for sequestered personnel.

(c) Where possible, time off should be allowed for crews that will be sequestered on site prior to their reporting to work to stay.

[2] The exemption proposed allowance period applies only to work hours, work hour controls and rest breaks as required by 10CFR26.205(c) and (d). All other fitness-for-duty requirements for managing fatigue, such as self-declarations and fatigue assessments would remain in effect.

5.3 OPPORTUNITY AND ACCOMMODATIONS FOR REST

[1] Duty schedules will be developed prior to sequestering that will provide personnel who are not performing duties an opportunity for rest during site preparation and sequestering conditions. The schedules should be as synchronized as possible to minimize disturbances in the established sleeping areas.

[2] Sleeping accommodations within a weather protected environment will be made available that minimize the interruption of sleep.

NOTE

Predictions and/or projections for the development or movement of tropical systems are based on information provided by the National Hurricane Center. Actions to be taken by surrounding communities are at the discretion of local political entities. Fatigue rule exemption entry and exit criteria have been defined with these variables in mind.

5.4 EXEMPTION FROM FATIGUE RULE REQUIREMENTS-ENTRY

[1] Exemption from the fatigue rule requirements is considered to be needed when site response requires preparation for and response to anticipated hurricane conditions. These activities require (at some point) the evacuation of some or all preparation team members and the sequestering of response team personnel onsite.

[2] The following are entry conditions where the site may apply a proposed allowance period for exemption from fatigue rule requirements.

(a) The site location is expected to be within a Hurricane Watch or Warning area.

OR

(b) The site location is expected to be within an Inland Hurricane Watch or Warning area.

OR

(c) Travel conditions are forecasted to be hazardous for employee commutes to and from the site (i.e. sustained wind conditions of greater than 40 mph).

OR

(d) Local municipalities are preparing to declare restrictions on travel that would impact employee commutes and/or are preparing to order or recommend evacuations in areas that affect essential staffing levels for the site.

[3] The site Vice President (or designee) shall determine when the proposed allowance period under the fatigue rule exemption begins.

(a) Document this decision **AND** the date and time the exemption proposed allowance period begins in an

emergency response facility log entry, WebEOC entry or a memo to file.

NOTE

ENS-EP-302, Attachment 9.1, steps 99 and 100 provide for storm-related communications with NRC response personnel and management. Notification to NRC of fatigue rule compliance status, anticipated entry/exit of any exemption proposed allowance period and actual entry/exit of the proposed allowance period should be communicated to NRC during these calls.

(b) Notify the NRC that the licensee proposed fatigue rule exemption allowance period for hurricane response has started.

[4] The Site Vice President (or designee) shall determine when sequestering of site personnel begins based on the conditions in [2] a through d above.

(a) Sequestering should not begin later than the start of local evacuations that affect essential staffing levels for the site.

(b) Document the decision to sequester site personnel **AND** the date and time sequestering begins in an emergency response facility log entry, WebEOC entry or a memo to file.

5.5 EXEMPTION FROM FATIGUE RULE REQUIREMENTS-EXIT

[1] **WHEN** the site is able to exit the proposed allowance period for the fatigue rule exemption and end site sequestering earlier than what is described in this section, **THEN** immediate action should be taken to do so.

NOTE

Exit from the proposed allowance period for the fatigue rule exemption shall not take place any later than the latest occurring condition described in [2] a through c below.

[2] The following are the fatigue rule exemption proposed allowance period exit conditions:

(a) Hurricane Watches / Warnings **OR**
Inland Hurricane Watches/Warnings have been canceled.

AND

(b) Weather conditions and highway infrastructure support safe travel.

AND

(c) Relief crews are available to restore normal shift rotation.

[3] The site Vice President (or designee) shall determine when the proposed allowance period under the exemption is ended.

[4] Document the date and time the proposed allowance period for the fatigue rule exemption was ended in an emergency response facility log entry, WebEOC entry or a memo to file.

(a) All administrative controls described in EN-OM-123 used for implementing the requirements of 10 CFR 26.205(c) and (d) are required to be resumed at this time.

> NOTE
>
> ENS-EP-302, Attachment 9.1, steps 99 and 100 provide for storm-related communications with NRC response personnel and management. Notification to NRC of fatigue rule compliance status, anticipated entry/exit of any exemption proposed allowance period and actual entry/exit of the proposed allowance period should be communicated to NRC during these calls.

[5] Notify the NRC that the licensee proposed allowance period for hurricane response is ended and that full compliance with the fatigue rule is re-established.

6.0 INTERFACES

[1] EN-OM-123, Fatigue Management Program

[2] ENS-EP-302, Severe Weather Response

[3] ENS-EP-303, Severe Weather Recovery

7.0 RECORDS

[1] None

8.0 SITE SPECIFIC COMMITMENTS

[1] None

9.0 ATTACHMENTS

[1] None

Corporate Support During Classified Emergencies

Procedure Contains NMM REFLIB Forms: YES ☐ NO ☒

Effective Date	Procedure Owner: Title: Sr. Manager, EP Site: HQN	Nicholas Avrakotos	Governance Owner: Title: Director, EP Site: HQN	Michael Slobodien
02/15/10				

Exception Date*	Site	Site Procedure Champion	Title
N/A	ANO		
N/A	BRP		
N/A	GGNS		
N/A	IPEC		
N/A	JAF		
N/A	PLP		
N/A	PNPS		
N/A	RBS		
N/A	VY		
N/A	W3		
N/A	NP		
	HQN	Myra Jones	EP Project Manager

Site and NMM Procedures Canceled or Superseded By This Revision

Process Applicability Exclusion: All Sites: ☐

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐ NP ☐

Change Statement

Editorial changes to reference the procedure title on all the attachments were completed. Additional changes were made to eliminate the need for INPO online identification and password. The revisions did not change the intent of this procedure.

*This procedure is only applicable to ECH and WPO operations because these locations are the only sites with Corporate Response Centers.

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1.0 PURPOSE

[1] This procedure provides guidance to the **Corporate Support Center (North)** staff and **Corporate Emergency Center (South)** staff to provide a wide range of support to any of the Entergy Nuclear facilities that have declared (classified) an emergency. This support may be from the headquarters staff or coordinated from the other units within Entergy Corporation.

2.0 REFERENCES

[1] Indian Point Energy Center Emergency Plan

[2] Pilgrim Nuclear Power Station Emergency Plan

[3] Vermont Yankee Nuclear Power Plant Emergency Plan

[4] James A. FitzPatrick Nuclear Power Plant Emergency Plan

[5] Referenced Emergency Plan Implementing Procedures

[6] Corporate Support Center Resource Manual

[7] EN-OM-128, Notifications of Off-Normal Situations/Corporate Duty Manager Responsibilities

[8] Arkansas Nuclear One Nuclear Power Plant Emergency Plan

[9] Grand Gulf Nuclear Power Plant Emergency Plan

[10] River Bend Nuclear Power Station Emergency Plan

[11] Waterford 3 Nuclear Power Plant Emergency Plan

[12] EN-EP-602 Corporate Support During Off-Normal Situations

[13] ENS-EP-302 Severe Weather Response

3.0 DEFINITIONS

[1] Corporate Support Center (CSC) –A facility located on the 12th floor of the AT&T Building at 440 Hamilton Avenue in White Plains, NY. This facility is designated to provide support as needed to any site during an emergency response or an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit. This facility will also serve to provide support during Recovery operations at the affected unit(s).

[2] Corporate Emergency Center (CEC) – a facility located on the 1st Floor of the Echelon Building located at 1340 Echelon Parkway Jackson, MS. This facility is designated to

provide support as needed to any unit during an emergency response or an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit. This facility may be utilized to provide support during Recovery operations at the affected unit(s).

[3] Corporate Support Manager (North) – Designated individuals serving as a point of contact from the EN-NE Corporate Office that commit resources as requested from the affected unit(s)/site(s) during a declared emergency, Recovery operations or an Off-Normal situation.

[4] Corporate Support Center Coordinator (North) – Designated individuals supporting the Corporate Support Manager that provide support to the affected unit(s)/site(s) during a declared emergency, Recovery operations or an Off-Normal situation.

[5] Corporate Emergency Center Manager (South) – Personnel assigned as a point of contact from the ENS Headquarters Office that commits resources as requested from the affected unit(s)/site(s) during a declared emergency, Recovery operations or an Off-Normal situation.

[6] Corporate Emergency Center Support Staff (South) – Personnel assigned from various departments to support the Corporate Emergency Center Manager during emergencies, Recovery operations or an Off-Normal situation. This support staff will answer phones, coordinate activities between sites and perform other duties as assigned.

[7] Corporate Duty Manager – Refer to EN-OM-128 for definition.

4.0 RESPONSIBILITIES

4.1 The **Corporate Support Manager (North)** or **Corporate Emergency Center Manager (South)** is responsible for:

(a) The overall command and control of the procedural and requested support activities at the Corporate Support Center (CSC) or Corporate Emergency Center (CEC) during a declared.

(a) Making notifications to senior management personnel to ensure they are aware of the event and provide any available status regarding the event.

(b) Fulfilling requests for personnel and resources upon notification during a declared emergency where assistance is requested.

(c) Fulfilling requests upon notification during the Recovery operations from a declared emergency.

[2] The **Corporate Support Center Coordinator (North)** is responsible for:

(a) Responding to the Corporate Support Center and supporting the Corporate Support Manager.

(b) Coordinating communications and the requests for assistance during a declared emergency or Recovery operations where assistance is requested.

[3] The **CEC Support Staff (South)** are responsible for:

(a) Responding to the Corporate Emergency Center and supporting the Corporate Emergency Center Manager.

(b) Coordinating communications and requests for assistance during a declared emergency or Recovery operations where assistance is requested.

(c) Tracking all action items to completion

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

None

5.2 GENERAL DETAILS

[1] The affected Region's Corporate Center or affected unit (upon staffing of the Site's Emergency Operations Facility) will initiate a group page with a text message or a telephone number. The Corporate Support Center Coordinator (North) or Corporate Emergency Center Manager (South) is expected to contact the affected facility as soon as possible.

[2] Upon notification of an emergency by the affected facility, the CSC Coordinator or CEC Support staffs are to follow the instructions in Attachment 9.2.

[3] The Corporate Support Manager or Corporate Emergency Center Manager follows the instructions outlined in Attachment 9.1.

[4] The Corporate Support Manager or Corporate Emergency Center Manager follows the instructions on Attachment 9.4 upon the affected unit entering the Recovery phase of the event.

6.0 INTERFACES

The Corporate Support Manager (North) or Corporate Emergency Center Manager (South) interfaces with the affected unit's Emergency Response Organization or affected Regions Corporate Center.

7.0 RECORDS

All documents generated including logs, reports, and forms completed during this event are to be assembled and sent to the Emergency Preparedness Department for the affected unit, as they are permanent quality records.

8.0 SITE SPECIFIC COMMITMENTS

None

9.0 ATTACHMENTS

9.1 CSC/CEC Manager Checklist
9.2 CSC/CEC Checklist
9.3 Conference Call Participants Options
9.4 CSC/CEC Manager Recovery Activities Checklist
9.5 INPO Notification and Update Instructions

ATTACHMENT 9.1 **CSC/CEC MANAGER CHECKLIST**

Sheet 1 of 3

1.0 **Initial Event Responsibility/Activity**

1.1 **When** notified that a unit(s) has declared an emergency, **then** contact the Corporate Support Center (CSC) Coordinator or Corporate Emergency Center (CEC) Support staff and ensure awareness of the event and reporting to the CSC or CEC if it is an Alert or higher classification at a unit in your Region **or** if the affected unit/affected Region's Corporate Center has requested assistance **or** if headquarters management personnel have decided to respond to the CSC or CEC.

1.2 Ensure notifications are made to Senior Management and other corporate personnel per the Corporate Telephone Listing (see CSC or CEC Resource Manual).

1.3 Respond to the CSC or CEC or arrange for an alternate to respond to the facility as soon as practical if a decision has been made to staff the CSC or CEC.

1.3.1 Contact the affected unit(s)/affected Region's Corporate Center and inform them of your location and contact telephone number.

1.3.2 Provide information regarding the status of any notifications that you have completed to senior management.

1.3.3 Support any requests they have for you at that time.

1.3.4 Notify the requester when the task is completed or when you determine that you are having difficulty completing the task in a timely manner.

1.4 As needed, schedule a conference call and ensure conference call participants are notified. Possible conference call attendees are listed in Attachment 9.3, Conference Call Participant Options. Although participation may not be mandatory, it is suggested that each of these organizations be represented on each conference call.

1.4.1 Provide them the conference call number and PIN Code. The conference call numbers and PIN Codes are available in the CSC or CEC Resource Manual.

1.4.2 Provide them the time of the conference call.

1.5 Initiate the conference call on a speakerphone in the CSC or CEC Conference Room.

1.5.1 Initiate a roll call of expected participants and ensure all personnel identify themselves on the conference call.

1.5.2 Contact those that have not joined the conference call and ensure that they are requested to participate.

1.5.3 Lead the conference call as necessary and ensure:

1.5.3.1 All priority items are addressed.

ATTACHMENT 9.1 **CSC/CEC MANAGER CHECKLIST**

Sheet 2 of 3

1.5.3.2 Notes regarding the information provided are taken.

1.5.3.3 Assigned action items and the responsible individuals are documented.

1.5.4 Ensure participants are aware of the next scheduled conference call.

2.0 **Ongoing Activities**

2.1 Establish and coordinate periodic conference call(s):

2.1.1 Identify each participant on the conference call.

2.1.2 Lead the conference call to ensure communication is to the point and address the following:

2.1.2.1 Updated information regarding the emergency.

2.1.2.2 Status of outstanding action items.

2.1.2.3 Additional requests for personnel and/or resources.

2.1.3 Assign an individual to monitor the conference call and take notes and record action items.

2.1.4 Record and track the action items assigned to participants during the conference call.

2.1.5 Provide a frequency for periodic conference calls (hourly, etc).

2.2 Track and ensure conference call action items for the CSC or CEC are addressed.

2.3 Provide additional technical support as requested by the affected unit(s)/affected Region's Corporate Center or corporate management. Technical support is available in the following areas, as applicable:

- Engineering evaluation and consultation;
- Licensing evaluation and consultation;
- Radiological evaluation and consultation;
- Environmental dose calculations and projections;
- Evaluation of spent fuel incidents;
- Meteorological evaluation support;
- Health Physics liaison between Entergy and other regional facilities;
- Evaluation of options regarding the radiological aspects of recovery operations;

- Evaluation of accident severity using samples, monitoring readings, and auxiliary parameters as prescribed in the core damage assessment methodologies.

2.4 Initiate periodic briefings to CSC and CEC personnel.

2.4.1 Review essential information from the affected unit.

2.4.2 Provide status on priorities and tasks for the CSC and CEC.

2.4.3 Provide an opportunity for personnel to add information of interest to the entire CSC or CEC staff.

2.5 Initiate periodic updates to personnel and/or agencies initially notified if they are not included in the periodic conference calls with the affected unit/site.

2.6 When requesting support through INPO, use Attachment 9.5, INPO Update Notification Form. (See the CSC or CEC Resource Manual for INPO telephone number)

2.7 Provide periodic update on the status of requested items or services on an agreed upon time frequency (30 minutes, hourly, etc.) with the requesting facility.

2.8 Develop a second shift roster and rotation schedule to ensure 24 hour staffing of the CSC or CEC in support of the affected unit/affected Region's Corporate Center.

3.0 **Closeout Activity**

3.1 Ensure all personnel initially notified of the emergency have been notified that the event has been terminated and the transition to Recovery is underway.

3.2 When the site transitions to a Recovery Organization after an Alert or greater had been declared, utilize Attachment 9.4, CSC/CEC Manager Recovery Activities Checklist.

3.3 Replace unused materials to storage location and place all equipment in standby mode or de-energize as appropriate.

3.4 Collect all materials and records generated during the emergency and provide them to the Emergency Planning Department of the affected unit(s).

3.5 Be available to support critique activities that will follow the termination of the event.

ATTACHMENT 9.2 **CSC/CEC CHECKLIST**

Sheet 1 of 2

1.0 Initial Event Responsibility/Activity

1.1 The **CSC Coordinator (North)** or **CEC Support staffs (South)** will respond to pager or other notification as soon as possible.

1.2 Acquire basic information regarding the event by using the affected Unit's Essential Information form/sheet found in the Corporate Support Center or Corporate Emergency Center Resource Manual. If a form/sheet is not available, then acquire information to include:

- Event classification
- Time of classification
- Brief event description
- Status of the unit(s)
- Status of personnel
- Name, location and telephone number of individual currently in charge
- Name, location and telephone number of individual providing the information

1.3 Ask if there are requests for assistance.

1.4 Contact the Corporate Support Manager (North) or Corporate Emergency Center Manager (South) to discuss the event. Proceed to the Corporate Center if a decision is made to staff the CSC or CEC:

1.4.1 Activate the facility

1.4.1.1 If Indian Point is using the facility as an Alternate Emergency Operations Facility, then utilize another conference room on the 12th floor as the Corporate Support Center. (The NRC will be expected to use the video conferencing room for their response team)

1.4.1.2 If Grand Gulf is using the CEC facility as an Emergency News Media Center, then use another conference room as the CEC or collocate with the Grand Gulf team.

1.4.2 Check the fax machines for incoming information from the affected unit. Ensure that the information is available to the personnel responding to the CSC or CEC.

1.4.3 Contact the Corporate Center Manager in the unaffected Region (see the CSC or CEC Resource Manual) and provide information regarding the emergency.

1.5 Contact and request headquarters personnel to provide assistance in the CSC or CEC in the following areas, as applicable:

1.5.1 Communicator

1.5.2 Clerical assistance

1.5.3 Logistics support

1.5.4 Technical support

1.5.5 Media monitoring (radio, TV and Internet)

1.6 Provide support to the CSC or CEC Staff initiating communications, conference calls, facility activation, and equipment operation and coordinating the response.

2.0 Ongoing Activities

2.1 Coordinate and track requests for corporate support.

2.2 Coordinate requests for additional personnel, equipment and materials, and support services.

2.3 Notify and coordinate requests for assistance with offsite support organizations as directed by the Corporate Support Manager (North) or Corporate Emergency Center Manager (South).

2.4 Participate and/or monitor conference calls to ensure that action items are recorded and assigned appropriately.

2.5 Maintain and track the status of requests for assistance from the affected site.

2.6 Provide periodic status reports to the CSM or CEC Manager, as applicable.

2.7 Participate in facility briefings by providing additional or updated information.

3.0 Closeout Activities

3.1 When directed, ensure that the records generated at the CSC or CEC are collected and readied for transmittal to the affected facility.

3.2 Participate in CSC or CEC facility critiques as requested.

3.3 Ensure that the facility is ready for future use upon your departure. Issue corrective actions for inoperable equipment, facility inadequacies, and insufficient supplies.

ATTACHMENT 9.3 **CONFERENCE CALL PARTICIPANTS OPTIONS**

Sheet 1 of 1

Provide conference call number and PIN Code to all individuals expected to participate in the Conference Call and any member of the Senior Management Team that has been contacted and wishes to or has been designated to participate in the Conference Calls. It is suggested that the Corporate Center Manager in the unaffected region be included in each conference call.

The following conference call participants should be considered when developing the conference call in support of an emergency at one or more of the units. Although it is not mandatory, it is suggested that each of these organizations be represented on each conference call. Use the Corporate Support Center or Corporate Emergency Center Resource Manual to find the names and the telephone numbers of the personnel representing the participants listed below.

1. Affected Unit(s)/Site(s) - (Site VP, Emergency Director or EOF Lead Manager)
2. Corporate Support Center (North) or Corporate Emergency Center (South)
3. Senior Management
4. Unaffected sites - (VP or Control Room Shift Manager)
5. Corporation Headquarters – New Orleans, (as applicable)

At the discretion of senior management, additional personnel and/or locations may be added to the conference call. Ensure that designated personnel are provided the conference call number, PIN Code and conference call initiation time.

NOTE:

The conference call numbers and PIN Codes are available in the CSC or CEC Resource Manual.

ATTACHMENT 9.4 **CSC/CEC MANAGER RECOVERY ACTIVITIES CHECKLIST**

Sheet 1 of 2

1.0 **Recovery Activities**

1.1 When notified that the affected unit(s) is anticipating movement into a Recovery Phase of the event:

1.1.1 Participate as requested in conference calls regarding Recovery operations.

1.1.2 Provide information as requested to the Site Recovery Director or affected Region's Corporate Center Manager regarding requested activity.

1.2 Direct the Corporate Support Center Coordinator (North) or Corporate Emergency Center Support staff (South) to continue to identify and document issues relating to Recovery operations using guidance in the affected unit's Recovery procedure and to provide support as to the affected site as needed.

1.3 Upon transition to the Recovery Phase, provide notifications to the personnel and organizations that were notified by the CSC/CEC during the emergency.

1.4 Acquire and provide support as needed to the affected facility for the following disciplines, as applicable:

- Radiological Support
- Engineering Support
- Licensing Support
- Fuel Management Support
- Public Relations Support
- Legal Affairs Support
- Material, Purchasing and Contract Support
- Financial Support
- Risk Management (Insurance) Support
- Offsite Security Support
- Quality Assurance Support

1.5 Coordinate corporate resources including Entergy Nuclear Northeast, Entergy Nuclear South and Entergy Corporation to support the affected unit/site Recovery operations.

1.6 Coordinate requests for additional personnel, equipment and materials, and support services from the affected unit/affected Region's Corporate Center through the CSC or CEC.

1.7 Coordinate support from offsite support organizations as needed.

1.8 Develop a shift-rotation schedule for the CSC or CEC Recovery staff personnel.

1.9 Monitor progress of Recovery operations or tasks issued to the CSC or CEC.

1.10 Report the completion or the status of assigned activities during each conference call.

1.11 Assist the Site Recovery Director or affected Region's Corporate Center Manager with any requests for logistics, personnel, and materials.

1.12 Support the development of the report documenting the activities of the response and the Recovery activities.

2.0 **Closeout Activity**

2.1 Ensure all personnel initially notified of the emergency have been notified that the Recovery operations supported by Corporate Headquarters have been terminated. Provide them with information regarding a contact point for further inquiries.

2.2 Replace unused materials to storage location and place all equipment in standby mode or de-energize as appropriate.

2.3 Collect all materials and records generated during the emergency and provide them to the Emergency Planning Department of the affected unit(s).

2.4 Be available to support critique activities that will follow the termination of the event and recovery actions.

2.5 Dismiss the CSC or CEC Recovery Staff and terminate the support and ensure that the affected unit recovery personnel are aware of your termination activities.

ATTACHMENT 9.5 INPO NOTIFICATION AND UPDATE INSTRUCTIONS

Sheet 1 of 1

INPO Notification and Update Instructions

Item	Main Request	Description/Guideline for Request
1	INPO Emergency Notification	Call 1-800-321-0614 or 1-770-644-8091 • A voice recording will ask if the call is for an emergency or for a drill. Respond with the appropriate response as directed. • For an emergency, the recording will direct you to leave your (an emergency contact) name and phone number for callback. It will also direct you to provide a description of the emergency. • The INPO system forwards the information to the INPO on-call duty person. • The INPO duty person will call the contact information left on the recording. • INPO will provide contact information for follow-up updates and/or requests for assistance. If not provided, ask for the information or inform them that updates will be provided by fax. • INPO enters emergency notification information they receive into the Nuclear Network.
2	Fax updates after initial emergency notification	**Provide updated information to INPO on an as needed basis. Also, if faxing information to INPO, use the INPO Fax number – 1-770-644-8594** if the INPO emergency response center (ERC) is activated. Otherwise, use the normal fax number 1-770-644-8549
3	Internet Access to INPO	**Log on Entergy Computer system and access INPO at the following URL: http://www.inpo.org** Non-emergency contact information is found on the INPO homepage under the tab "Contact INPO 24/7"
4	Adding information to Nuclear Network	If entry of information into the Nuclear Network for industry updates is desired/required, contact or call the affected site Operating Experience Coordinator, Nuclear Support.

Corporate Support During Off-Normal Situations

Procedure Contains NMM REFLIB Forms: YES ☐ NO ☒

Effective Date	Procedure Owner:		Governance Owner:	
10/14/08	**Title:** Sr. Manager, EP **Site:** HQN	Nicholas Avrakotos	**Title:** Director, EP **Site:** HQN	Michael Slobodien

Exception Date*	Site	Site Procedure Champion	Title
N/A	ANO		
N/A	BRP		
N/A	GGNS		
N/A	IPEC		
N/A	JAF		
N/A	PLP		
N/A	PNPS		
N/A	RBS		
N/A	VY		
N/A	W3		
N/A	NP		
	HQN	Rebecca Martin	EP Project Manager

Site and NMM Procedures Canceled or Superseded By This Revision

Process Applicability Exclusion: All Sites: ☐
Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐ NP ☐

Change Statement

Editorial changes to clarify procedure interface with EN-EP-605, and EN-OM-128. The revisions did not change the intent of this procedure.

*This procedure is only applicable to ECH and WPO operations because these locations are the only sites with Corporate Response Centers.

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1.0 PURPOSE

[1] This procedure provides guidance to the **Corporate Support Center (North)** or **Corporate Emergency Center (South)** staff to provide a wide range of support to any of the Entergy Nuclear facilities during an Off-Normal Situation. This support may be from the EN-NE headquarters staff, ENS headquarters staff or coordinated from the other units within Entergy Corporation.

2.0 REFERENCES

[1] Referenced Emergency Plan Implementing Procedures

[2] ENN/ENS PL-145, Notification of Off-Normal Situations

[3] Corporate Support Center and Corporate Emergency Center Resource Manual

[4] ENS-EP-302 Severe Weather Response

[5] EN-EP-605 Corporate Incident Response Team

3.0 DEFINITIONS

[1] Corporate Support Center (CSC) –A facility located on the 12th floor of the AT&T Building at 440 Hamilton Avenue in White Plains, NY. This facility is designated to provide support as needed to any site during an emergency response or an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit. This facility will also serve to provide support during Recovery operations at the affected unit(s).

[2] Corporate Emergency Center (CEC) – a facility located on the 1st Floor of the Echelon Building located at 1340 Echelon Parkway Jackson, MS. This facility is designated to provide support as needed to any unit during an emergency response or an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit. This facility may be utilized to provide support during Recovery operations at the affected unit(s).

[3] Corporate Support Manager (North) – Designated individuals serving as a point of contact from the EN-NE Corporate Office that commit resources as requested from the affected unit(s)/site(s) during a declared emergency, Recovery operations or an Off-Normal situation.

[4] Corporate Support Center Coordinator (North) – Designated individuals supporting the Corporate Support Manager that provide support to the affected unit(s)/site(s) during a declared emergency, Recovery operations or an Off-Normal situation.

[5] Corporate Emergency Center Manager (South) – Personnel assigned as a point of contact from the ENS Headquarters Office that commits resources as requested from the affected unit(s)/site(s) during a declared emergency, Recovery operations or an Off-Normal situation.

[6] Corporate Emergency Center Support Staff (South) – Personnel assigned from various departments to support the Corporate Emergency Center Manager during emergencies, Recovery operations or an Off-Normal situation. This support staff will answer phones, coordinate activities between sites and perform other duties as assigned.

[7] Corporate Incident Response Center (CIRC) –The CSC or CEC along with any adjoining conference rooms will be the primary Corporate Incident Response Center. If this location becomes uninhabitable or unavailable, the EOF at an unaffected site or the CIRC in an unaffected Entergy region will be the alternate Corporate Incident Response Center (CIRC). While the CIRT is in transit, the CIRC in the unaffected Entergy region will take the lead in CIRT responsibilities.

[8] Corporate Incident Response Team (CIRT) – Experienced personnel assigned from various departments to support the Corporate Incident Response Team Director during Off-Normal Situations. This support staff will answer phones, coordinate activities between sites and perform other duties as assigned. Once assigned to the Corporate Incident Response Team, an individual's primary duty is to support the response effort.

[9] Corporate Incident Response Team Director - Senior manager (i.e. Vice President, Director, Manager, Staff Assistant) assigned by the Chief Operations Officer as a result of an Off-Normal Event that has the potential to affect plant safety, personnel safety, or equipment reliability/availability.

[10] Off-Normal Situation – Any event at an Entergy site that may require support or a coordinated effort from Headquarters. Examples include but are not limited to severe weather, union strikes, blackout events, grid failures, plant outages, major equipment failures, flu pandemic, ice storms, or fire.

4.0 RESPONSIBILITIES

[1] The **Corporate Incident Response Director** is responsible for:

(a) The overall command and control of the procedural and requested support activities at the Corporate Support Center (CSC), Corporate Emergency Center (CEC), and Corporate Incident Response Center (CIRC) during an Off-Normal Situation where assistance is requested.

(b) Making notifications to senior management personnel to ensure they are aware of the event and provide any available status regarding the event.

(c) Fulfilling requests from any of the sites upon notification of an Off-Normal Situation.

[2] The **Corporate Support Manager (North)** or the **Corporate Emergency Center Manager (South)** will assume the duties of the CIRT Director until the Director is assigned.

> Note
>
> The Corporate Incident Response Team (CIRT) may not be established for every Off-Normal Situation. Primary purpose of the CIRT is to provide senior management oversight and direction when conditions warrant coordination between sites and/or authorization of expenditures or resources.

[3] The **Corporate Support Center Coordinator (North)** is responsible for:

(a) Responding to the Corporate Support Center and supporting the Corporate Support Manager.

(b) Coordinating communications and the requests for assistance during an Off-Normal Situation.

[4] The **CEC Support Staff (South)** is responsible for:

(a) Responding to the Corporate Emergency Center and supporting the Corporate Emergency Center Manager.

(b) Coordinating communications and requests for assistance during an Off-Normal Situation.

(c) Tracking all action items to completion.

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

None

5.2 GENERAL DETAILS

[1] The affected Region's Corporate Center or affected unit may initiate a group page with a text message or a telephone number if assistance is needed. The Corporate Support Center Coordinator (North) or Corporate Emergency Center Manager (South) is expected to contact the affected facility as soon as possible.

[2] Senior management will initiate a response to an Off-Normal Situation at the affected unit/site. The CSC Coordinator, the Corporate Support Manager (North), or the CEC Manager (South) will support this response when notified.

[3] Upon notification of an Off-Normal Situation by the affected unit and if a decision is made to staff the CSC (North) or CEC (South), the CSC Coordinator (North) or CEC Support staff (South) are to follow the instructions in Attachment 9.2, CSC/CEC Checklist.

[4] The Corporate Support Manager (North) and the CEC Manager (South) shall respond to the Corporate Center if a decision to staff the CSC or CEC is made and follow the instructions outlined in Attachment 9.1, CSC/CEC Manager Checklist.

6.0 INTERFACES

The Corporate Support Manager (North), Corporate Emergency Center Manager (South), or the CIRT Director interfaces with the facility personnel at the plants or the affected Region's Corporate Center.

7.0 RECORDS

All documents generated including logs, reports, and forms completed during this event are to be assembled and sent to the Emergency Preparedness Department for the affected unit, as they are permanent quality records.

8.0 SITE SPECIFIC COMMITMENTS

None

9.0 ATTACHMENTS

9.1 CSC/CEC Manager Checklist

9.2 CSC/CEC Checklist

9.3 Conference Call Participant Options

ATTACHMENT 9.1 **CSC/CEC MANAGER CHECKLIST**

Sheet 1 of 4

1.0 **Initial Event Responsibility/Activity**

1.1 Discuss priorities and proposed actions with the CIRT Director if a Director has been appointed.

1.2 Discuss the Off-Normal Situation with the Corporate Support Center Coordinator (North) or CEC Support Staff (South) and ensure awareness of the event and response to the CSC or CEC if the affected unit/affected Region's Corporate Center has requested assistance and/or if headquarters management personnel have decided to respond to the CSC or CEC.

1.3 The CSC Manager and the CEC Manager will discuss any Off-Normal Situation that may require support from a fleet perspective.

1.4 Ensure notifications are made to Senior Management and other corporate personnel per the Corporate Telephone Listing. This may be accomplished by the CIRT Director. (See CSC/CEC Resource Manuals).

1.5 Respond to the CSC/CEC or arrange for an alternate to respond to the CSC/CEC if a decision has been made to staff the Corporate Support Center (CSC) or the Corporate Emergency Center (CEC).

1.5.1 Upon arrival, contact the affected unit(s)/affected Region's Corporate Center and inform them of your location and contact telephone number.

1.5.2 Provide information regarding the status of any notifications that you have completed to senior management.

1.5.3 Support any requests they have for you at that time.

1.5.4 Notify the requester when the task is completed or when you determine that you are having difficulty completing the task in a timely manner.

1.6 If the CSC or CEC is activated due to an Off-Normal Situation, then upon management direction, establish a conference call.

1.7 Ensure conference call participants are notified. Possible conference call attendees are listed in Attachment 9.3, Conference Call Participant Options. Although participation may not be mandatory, it is suggested that each of these organizations are represented on each conference call.

1.7.1 Provide them the conference call number and PIN Code. The conference call numbers and PIN Codes are available in the CSC or CEC Resource Manual.

1.7.2 Provide participants the time of the conference call.

1.8 Initiate the conference call on a speakerphone in the CSC or CEC Conference Room.

1.8.1 Initiate a roll call of expected participants and ensure all personnel identify themselves on the conference call.

1.8.2 Ensure those that have not joined the conference call are contacted and requested to participate.

1.8.3 Lead the conference call as necessary and ensure:

1.8.3.1 Status of the affected unit is addressed.

1.8.3.2 All priority items are addressed.

1.8.3.3 Notes regarding the information provided are taken.

1.8.3.4 Assigned action items and the responsible individuals are documented.

1.8.4 Ensure participants are aware of the next scheduled conference call.

2.0 **Ongoing Activities**

2.1 Establish and coordinate periodic conference call(s):

2.1.1 Identify each participant on the conference call.

2.1.2 Lead the conference call to ensure communication is to the point and address the following.

2.1.2.1 Status of the affected unit.

2.1.2.2 Updated information regarding the event.

2.1.2.3 Status of outstanding action items.

2.1.2.4 Additional requests for personnel and/or resources.

2.1.3 Assign an individual to monitor the conference call and take notes and record action items.

2.1.4 Record and track the action items assigned to participants during the conference call.

2.1.5 Provide a frequency for periodic conference calls (hourly, etc).

2.2 Track and ensure conference call action items for the CSC or CEC are addressed.

2.3 Provide additional technical support as requested by the affected unit(s)/affected Entergy Region's Corporate Center or corporate management. Technical support is available in the following areas, as applicable:

- Engineering evaluation and consultation;
- Licensing evaluation and consultation;
- Radiological evaluation and consultation;
- Environmental dose calculations and projections;
- Evaluation of spent fuel incidents;
- Meteorological evaluation support;
- Health Physics liaison between Entergy and other regional facilities;
- Evaluation of options regarding the radiological aspects of recovery operations;
- Evaluation of accident severity using samples, monitoring readings, and auxiliary parameters as prescribed in the core damage assessment methodologies.

2.4 Initiate periodic briefings to CSC or CEC personnel.

2.4.1 Review essential information from the affected unit.

2.4.2 Provide status on priorities and tasks for the CSC or CEC.

2.4.3 Provide an opportunity for personnel to add information of interest to the entire CSC or CEC staff.

2.5 Initiate periodic updates to personnel and/or agencies initially notified if they are not included in the periodic conference calls with the affected unit/site.

2.6 Provide periodic update on the status of requested items or services on an agreed upon time frequency (30 minutes, hourly, etc.) with the requesting facility.

2.7 Develop a second shift roster and rotation schedule to ensure 24 hour staffing of the CIRC and/or CSC/CEC in support of the affected unit/ affected Region's Corporate Center.

3.0 **Closeout Activity**

3.1 Ensure all personnel initially notified of the event have been notified that the event has been terminated and the transition to Recovery is underway.

3.2 Replace unused materials to storage location and place all equipment in standby mode or de-energize as appropriate.

ATTACHMENT 9.1 CSC/CEC MANAGER CHECKLIST

Sheet 4 of 4

3.3 Collect all materials and records generated during the emergency and provide them to the Emergency Planning Department of the affected unit(s).

3.4 Be available to support critique activities that will follow the termination of the event.

ATTACHMENT 9.2 **CSC/CEC CHECKLIST**

Sheet 1 of 2

1.0 **Initial Event Responsibility/Activity**

1.1 If paged or called, respond to pager or other notification as soon as possible:

1.1.1 When responding to the notification, you may be responding to the following:
- An affected unit
- Senior Management
- An event in either the North or South

1.2 Acquire basic information regarding the event by using the affected Unit's Essential Information form/sheet found in the Corporate Support Center (North) or Corporate Emergency Center (South) Resource Manual. If a form/sheet is not available, then acquire information to include:
- Type of Event
- Time of occurrence
- Brief event description
- Status of the unit(s) and personnel
- Name, location and telephone number of individual currently in charge
- Name, location and telephone number of individual providing the information

1.3 Ask if there are requests for assistance.

1.4 Contact the Corporate Support Manager (North) or CEC Manager (South) to discuss the event. Proceed to the Corporate Support Center (North) or Corporate Emergency Center (South) if a decision is made to staff the Corporate Center:

1.4.1 Activate the facility

1.4.1.1 If Indian Point is using the CSC facility as an Alternate Emergency Operations Facility, then use another conference room on the 12th floor as the Corporate Support Center.

1.4.1.2 If Grand Gulf is using the CEC facility as an Emergency News Media Center, then use another conference room as the CEC or collocate with the Grand Gulf team.

1.4.2 Check the fax machines for incoming information from the affected unit. Ensure that the information is available to the personnel responding to the CIRC or CSC/CEC.

1.4.3 Contact the other Region's Corporate Center Manager (see the CSC or CEC Resource Manual) and provide information regarding the event.

ATTACHMENT 9.2 **CSC/CEC CHECKLIST**

Sheet 2 of 2

1.5 Contact and request headquarters personnel to provide assistance in the CSC or CEC in the following areas, as applicable:

1.5.1 Communicator

1.5.2 Clerical assistance

1.5.3 Logistics support

1.5.4 Technical support

1.5.5 Media monitoring (radio, TV and internet)

1.6 Provide support as necessary for initiating communications, conference calls, facility activation, equipment operation and coordinating the response.

2.0 Ongoing Activities

2.1 Coordinate and track requests for corporate support.

2.2 Coordinate requests for additional personnel, equipment and materials, and support services.

2.3 Notify and coordinate requests for assistance with offsite support organizations as directed by the Corporate Support Manager (North) or Corporate Emergency Center Manager (South).

2.4 Participate and/or monitor conference calls to ensure that action items are recorded and assigned appropriately.

2.5 Maintain and track the status of requests for assistance from the affected site.

2.6 Provide periodic status reports to the CSC Manager or CEC Manager.

2.7 Participate in facility briefings by providing additional or updated information.

3.0 Closeout Activities

3.1 When directed, ensure that the records generated at the CSC or CEC are collected and readied for transmittal to the affected facility.

3.2 Participate in CIRC or CSC/CEC facility critiques as requested.

3.3 Ensure that the facility is ready for future use upon your departure. Issue corrective actions for inoperable equipment, facility inadequacies, and insufficient supplies.

ATTACHMENT 9.3 **CONFERENCE CALL PARTICIPANTS OPTIONS**

Sheet 1 of 1

Provide conference call number and PIN Code to all individuals expected to participate in the Conference Call and any member of the Senior Management Team that has been contacted and wishes to or has been designated to participate in the Conference Calls. It is suggested that the Corporate Center Manager in the unaffected Region be included in each conference call.

The following conference call participants should be considered when developing the conference call in support of an Off-Normal Situation at one or more of the units or when interfacing and supporting the unaffected regional fleet response. Although it is not mandatory, it is suggested that each of these organizations be represented on each conference call. Use the Corporate Support Center or Corporate Emergency Center Resource Manual to find the names and the telephone numbers of the personnel representing the participants listed below.

1. Affected Unit(s)/Site(s) - (Site VP, General Manager - Plant Operations, Control Room Shift Manager or designated management personnel)
2. Corporate Support Center (North) or Corporate Emergency Center (South)
3. Senior Management
4. Unaffected sites - (VP or Control Room Shift Manager)
5 Corporation Headquarters – New Orleans, (as applicable)

At the discretion of senior management, additional personnel and/or locations may be added to the conference call. Ensure that designated personnel are provided the conference call number, PIN Code and conference call initiation time.

NOTE:

The conference call numbers and PIN Codes are available in the CSC or CEC Resource Manual.

Corporate Incident Response Team

Procedure Contains NMM REFLIB Forms: YES ☐ NO ☒

Effective Date	Procedure Owner:		Governance Owner:	
12/10/08	**Title:** Sr. Manager, EP **Site:** WPO	Nicholas Avrakotos	**Title:** Director, EP **Site:** WPO	Michael Slobodien

Exception Date*	Site	Site Procedure Champion	Title
	ANO	Robert Holeyfield	Manager, EP
N/A	BRP		
	GGNS	Mary Ann Wilson	Manager, EP
	IPEC	Brian Sullivan	Manager, EP
	JAF	Peter Cullinan	Manager, EP
	PLP	Dan Malone	Manager, EP
	PNPS	Thomas Sowden	Manager, EP
	RBS	Joseph Leavines	Manager, EP
	VY	Mike McKenney	Manager, EP
	W3	James Lewis	Manager, EP
	ECH	Myra Jones	EP Project Manager
	WPO	Alain Grosjean	EP Project Manager

Site and NMM Procedures Canceled or Superseded By This Revision

Process Applicability Exclusion: All Sites: ☐

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐ NP ☐

Change Statement

Editorial changes to reference EN-OM-128 for definition and responsibilities of the Corporate Duty Manager. The revisions did not change the intent of this procedure.

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1.0 PURPOSE

[1] This procedure provides guidance to the Corporate Incident Response Team (CIRT). This team will provide a wide range of support to any of the Entergy Nuclear facilities during an Off-Normal Situation (i.e. severe weather, labor disruption, blackout event, grid failure, plant outage, major equipment failure, flu pandemic, earthquake, ice storm, fire).

[2] The Corporate Incident Response Team may not be established for every Off-Normal Situation. The primary purpose of the CIRT is to provide senior management oversight and direction when conditions warrant coordination between sites and/or authorization of expenditures or resources.

2.0 REFERENCES

None

3.0 DEFINITIONS

[1] Corporate Incident Response Center (CIRC) – The Corporate Service Center or Corporate Emergency Center along with any adjoining conference rooms will be the primary Corporate Incident Response Center. If this location becomes uninhabitable or unavailable, the Emergency Operation Facility at an unaffected site or the CIRC in an unaffected Entergy region will be the alternate Corporate Incident Response Center. While the CIRT is in transit, the CIRC in the unaffected Entergy region will take the lead in CIRT responsibilities.

[2] Corporate Incident Response Team Director – Senior manager (i.e. Vice President, Director, Manager, Staff Assistant) assigned by the Chief Operations Officer (COO) as a result of an Off-Normal Event that has the potential to affect plant safety, personnel safety, or equipment reliability/availability.

[3] Corporate Support Center (CSC) – A facility located on the 12th floor of the AT&T Building at 440 Hamilton Avenue in White Plains, NY. This facility is designated to provide support as needed to any site during an emergency response or an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit. This facility will also serves to provide support during Recovery operations at the affected unit(s).

[4] Corporate Emergency Center (CEC) – A facility located on the 1st floor of the Echelon Building located at 1340 Echelon Parkway, Jackson, MS. This facility is designated to provide support as needed to any site during an emergency response or an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit.

[5] Corporate Incident Response Team (CIRT) – Experienced personnel assigned from various departments to support the Corporate Incident Response Team Director during Off-Normal Situations. This support staff will answer phones, coordinate activities between sites and perform other duties as assigned. Once assigned to the Corporate Incident Response Team, an individual's primary duty is to support the response effort.

[6] Off-Normal Situation – Any event that may require support or a coordinated effort from Headquarters. Examples include but are not limited to severe weather, union strikes, blackout events, grid failures, plant outages, major equipment failures, flu pandemic, ice storms, or fires.

[7] Corporate Duty Manager (CDM) – Refer to EN-OM-128 for definition.

[8] Shared Resource Coordinator – A person assigned from headquarters that is responsible for coordinating the sharing of personnel between sites. He/she will interface between sites and coordinate activities to ensure site request are filled timely and with qualified personnel.

4.0 RESPONSIBILITIES

[1] The Corporate Incident Response Team Director is responsible for:

(a) The overall command and control of the procedural and requested support activities at the Corporate Incident Response Center during an Off-Normal Situation where assistance is needed or requested.

(b) Maintaining communication with the affected site Vice President who has overall responsibility for day-to-day recovery operations at the site.

(c) Making notifications to senior management personnel to ensure they are aware of the event and provide any available status regarding the event.

(d) Establishing an organization to handle issues such as housing, pay, logistics, recovery, engineering, etc.

(e) Fulfilling requests from any of the sites upon notification of an Off-Normal Situation. These requests may include, but are not limited to, the following:

- Return electrical service, city water, or service water to the site.
- Clearing of roadways.
- Obtaining food and supplies to support site recovery.
- Obtaining heavy equipment, portable generators, and lighting.
- Providing temporary living quarters to displaced employee families.

- Providing and coordinating shared resources/relief crews.

[2] The Corporate Duty Manager responsibility in accordance with EN-OM-128.

[3] Media/Corporate Communication representatives are responsible for working with company officials to develop formal statements and press information regarding the plant. All press releases will be processed through corporate communications.

[4] Licensing is responsible for coordinating with site licensing personnel and supporting the site interpretation of Technical Specifications, UFSAR, and other licensing documents. Licensing will assist Emergency Planning (EP) with completion of the Post Disaster Assessment Checklist in accordance with EN-EP-301.

[5] Engineering provides technical support to the recovery operation. In addition to routine technical support, Engineering team members will coordinate with Transmission and Distribution personnel in the South to assign proper priority for return of electrical service to equipment critical to operation and safety of the plant.

[6] Corporate Security provides liaison with Local Law Enforcement Agencies and the site Security organization. In addition, Corporate Security will provide support and relief as necessary.

[7] Materials, Purchasing, and Contracts (MP&C) is responsible for coordinating with the sites relative to procurement of supplies, equipment, and other resources necessary to address recovery actions.

[8] Emergency Planning will coordinate activities with the CEC, CSC, or Corporate Incident Response Team. Emergency Planning will interface with site EP Management and assist with the completion of Post Disaster Assessment Checklist in accordance with EN-EP-301.

[9] Human Resources (HR)/Site Support will interface with Site Management and will address the needs of employees and their families that have been affected by plant events. Human Resources/Site Support addresses hotel and housing needs, rental vehicles, etc., and secures professional services to address emotional/psychological concerns resulting from the event.

[10] Shared Resources Coordinator interfaces with the sites and coordinates the sharing of resources from one site to another. He/she will track resources and ensure that shared resources are multi-site badged and qualified for the desired activity.

[11] Business Services makes assessments regarding the extent and duration of financial needs and assigns event tracking numbers to track related cost. Business Services

(South) coordinates shared resources that are needed to support Transmission and Distribution.

[12] CIRC Staff is a team of experienced personnel responsible for responding to the facility and supporting the Corporate Incident Response Team Director. This staff will coordinate communications, track actions, and request to completion. The CIRC Staff will include personnel from several groups (i.e. Engineering, Licensing, and MP&C). This group will include personnel with technical and administrative skills.

[13] CEC or CSC Manager is responsible for facility preparation efforts. He/she will make contact with Nuclear Energy Institute (NEI), Institute of Nuclear Power Operations (INPO), and Risk Engineering and make them aware of plant status and needs in accordance with EN-EP-601 or EN-EP-602.

(a) Coordinate communications and requests for assistance from the Entergy sites during an Off-Normal Situation.

(b) Tracking all action items to completion.

Note:

The Nuclear Regulatory Commission (NRC) will be notified through site established communication channels (resident inspector, ENS line, etc.). If site external communications are completely lost, the CEC or CSC Manager will contact the NRC with updates as directed by the sites through internal communication (i.e. radio, text message, and internal land line).

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

None

5.2 GENERAL DETAILS

[1] The Chief Operations Officer in the affected region or designee may activate the CIRT and/or change the CIRT membership as he/she deems necessary to best support the event or recovery efforts. The decision to initiate a CIRT should be based on the consequence of the event in relation to reactor safety, plant or equipment reliability/availability, and personnel safety. The CIRT will typically be activated when a site needs or requests corporate assistance in coordinating activities following an Off-Normal Situation (i.e. severe weather, labor disruption, blackout event, grid failure, plant outage, major equipment failure, flu pandemic, earthquake, ice storm, fire).

[2] The organization in Attachment 9.1 is a typical structure for a severe weather event that has affected a site and surrounding area. Each event may not require all the positions identified on the attached chart to be assigned. The CIRT Director will evaluate each Off-Normal event and complete the organization as applicable to the event. He/she may elect to assign additional positions not identified on the typical organization chart in attachment 9.1.

[3] The Corporate Incident Response Team Director will establish a shift schedule for the Corporate Incident Response Center staff personnel. He/she will also develop a relief plan for senior management staff that will engage approximately 7 days following the event.

[4] The CSC Manager (North) and the CEC Manager (South) will utilize EN-EP-601 or EN-EP-602 to support CIRT activities.

[5] Security will ensure badging personnel are available to remove any unnecessary burdens for escorting, testing, or delays associated with badging. Security is responsible for recovery activities that include maintaining site sustainability as well as non-plant support needs including CIRC security. Security (South) will also contact the Power House Storm Boss to evaluate Power House security needs.

[6] Shared Resources Coordinator will evaluate site needs and ensure that personnel with desired qualifications are sent to the affected site. The coordinator will evaluate logistic needs and ensure resources arrive with required multi-site badge, bedding, food, and water if applicable so that site is not over burden with additional request. He/she will ensure that desired shared resources qualifications (i.e. MOV Technician, Electrical, Mechanical, SRO) match plant request.

[7] MP&C will locate and purchase needed material and services for event recovery. These may include but not limited to temporary diesel generators, temporary boilers, diesel fuel for site and headquarters.

[8] Human Resources/Site Support should contact site HR and begin an immediate accountability of employees and critical contractors (i.e. Security).

(a) HR should call employee contacts to establish locations and status of employees and family members.

(b) HR should take responsibility for temporary housing for shared resources and relief personnel. This effort will relieve the site of this administrative function so that the site team can focus on plant recovery.

(c) HR should evaluate the need to establish a standard hotel reservation for responding resources to the site following the event.

(d) HR should develop a standard pay policy for plant workers, response team, relief team, and storm workers both exempt and non-exempt. HR will also make contact with the following groups and ensure these agencies are aware of Entergy's plans and needs:

(1) US Department of Homeland Security

(2) Local Law Enforcement

(3) Federal Emergency Management Agency (FEMA)

(4) State Department of Economic Development

(5) Local Planning and Zoning Department

(e) HR will make temporary living arrangements for employees and families if the surrounding plant area is affected by the event. This will allow families to move back into the affected area so the workforce can be stabilized. This effort should relieve the site team of this administrative function so the site team may focus on plant recovery.

[9] Emergency Planning will evaluate resources needed to support completion of the FEMA restart review. EP personnel may be resource shared from other unaffected sites or from the Industry. This FEMA review evaluates the capability of offsite emergency response organizations to respond to site emergencies following the passage of natural disasters or area blackouts directly or indirectly affecting the site's 10-mile Emergency Planning Zone. The results of this FEMA review should be coordinated with Licensing and documented in accordance with EN-EP-301.

[10] CEC Manager (South) will coordinate transportation protocols with the Entergy storm center. He/she will develop transportation plans (i.e. high clearance vehicles, amphibious vehicles, helicopters, boats) and will coordinate road clearing/preparation with the Entergy storm center. The CEC or CSC Manager will provide periodic updates to INPO and NEI in accordance with EN-EP-601. NRC notifications will typically be performed by the site unless communications are completely lost. If site external communications are completely lost, the CEC or CSC Manager will contact the NRC with updates as directed by the sites through internal communication (i.e. radio, text message, internal land line).

6.0 INTERFACES

[1] EN-OM-128, Notifications of Off-Normal Situations/Corporate Duty Manager Responsibilities

[2] EN-EP-301, EP Assessment of Offsite Emergency Response Capability Following a Natural Disaster

[3] EN-EP-601, Corporate Support During Classified Emergencies

[4] EN-EP-602, Corporate Support During Off-Normal Situations

7.0 RECORDS

[1] All documents generated including logs, reports, and forms completed during this event are to be assembled and sent to the Emergency Preparedness Department for the affected unit, as they are permanent quality records.

8.0 SITE SPECIFIC COMMITMENTS

None

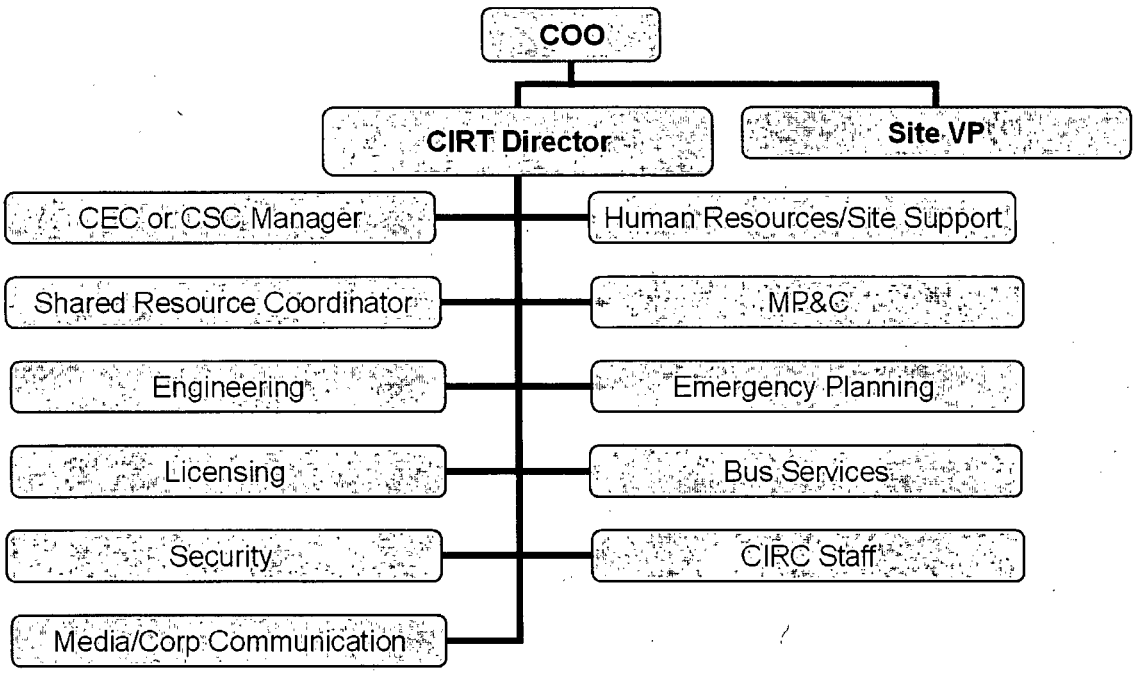
9.0 ATTACHMENTS

9.1 CORPORATE INCIDENT RESPONSE TEAM ORGANIZATION CHART

ATTACHMENT 9.1 — CORPORATE INCIDENT RESPONSE TEAM ORGANIZATION CHART

Sheet 1 of 1

Corporate Incident Response Team Organization (Typical)



CONTROLLED DOCUMENT REVIEW/APPROVAL FORM

DOCUMENT INFORMATION

REVIEWS / APPROVALS					
Action Taken	Action Date	Last Name	First Name	Facility	Approval

Note: all fields are taken from the TIMX600 panel for documents with an associated routing/approval (TIMX600) panel.

Severe Weather Response

Procedure Contains NMM REFLIB Forms: YES ☐ NO ☒

Effective Date	Procedure Owner: Title: Site:	Governance Owner: Title: Site:
09/02/10	Nick Avrakotos Sr. Manager EP Projects HQN	William Renz Director, Emergency Planning HQN

Exception Date*	Site	Site Procedure Champion	Title
	ANO	Robert Holeyfield	Manager, EP
N/A	BRP		
	GGNS	Christopher Lewis	Manager, EP
N/A	IPEC		
N/A	JAF		
N/A	PLP		
N/A	PNPS		
	RBS	Troy D Burnett	Manager, EP
N/A	VY		
	W3	Gregory Fey	Manager, EP
N/A	NP		
	HQN	Myra Jones	Project Manager, EP

Site and NMM Procedures Canceled or Superseded By This Revision

None

Process Applicability Exclusion: All Sites: ☐

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐

Change Statement

1. Deleted step 5.6.4 because it was redundant to 5.6.2.
2. Attachment 9.1 step 107 – editorial changed evaluate to evacuate
3. Attachment 9.2 replaced all references to Nextel phones with "non-local area code cell phones"
4. Page 61 table 9.2.9 line 2 – added "and provide a barrier to ensure that the protected divisions are respected during bunking activities.
5. Attachment 9.5 Table 9.5.1 Row 1 – editorial added "circle one" and "recommended" in row 13 added "when needed in the 4th column.
6. Attachment 9.5 sheet 1 – added instructions to assign an accountability officer and to brief the CEC staff on evacuation, fire, and tornado warning response.
7. Replaced Power House with Storm Center
8. Attachment 9.5 sheet 1 #11 – added instruction to test both diesel generators if not tested within the last 7 days.
9. Attachment 9.5 sheet 1 – combined steps 12, 13, and 14 into one step to obtain phone numbers. Now step 13 in revision 11. Renumbered sequential steps.
10. Attachment 9.5 sheet 2 step 14 – added instructions to request sites to fax personnel list.
11. Attachment 9.5 sheet 2 step 15 – added clarification on when to consider using 2 liaisons.
12. Attachment 9.5 sheet 2 step 16 – added MP&C to do the verification
13. Attachment 9.5 sheet 2 step 21 to obtain office supplies was moved to the Facility Preparation section as step 18
14. Attachment 9.5 sheet 3 step 37 – deleted, duplicate step 22
15. Attachment 9.5 sheet 3 added new step 36 to advise shared resources to bring personal supplies.
16. Attachment 9.5 sheet 9 changed the table to "Example List…"
17. Attachment 9.9 sheet 2 #5 deleted "lots of" and lines 2 - 7 from "due to fiberglass…properly secured"

*Requires justification for the exception

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1.0 PURPOSE

[1] This procedure provides guidance to Entergy personnel regarding support of Entergy sites during Hurricanes, Tornadoes and severe thunderstorm situations.

[2] This procedure provides guidelines for the control of and logistical activities pertaining to storm conditions. The applicable sections of the attached checklist may be used to address ice storms, earthquakes, flooding and other natural events.

(a) These guidelines may be used in the preparation/response to storm conditions at any Entergy site.

[3] This procedure is intended to supplement operation's procedures as deemed appropriate by management.

2.0 REFERENCES

[4] Nuclear Management Manual Procedure EP-602, Corporate Support During Off-Normal Situations

[5] Nuclear Management Manual Policy PL-108, Emergency Management Policy

[6] Nuclear Management Manual Procedure LI-102, Corrective Action Process

[7] NRC Administrative Letter 97-03, Plant Restart Discussions Following Natural Disasters

[8] Nuclear Management Manual Procedure EP-301, Emergency Planning Assessment of Offsite Emergency Response Capability Following a Natural Disaster

[9] NRC Information Notice (IN) 93-53, "Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned".

[10] NUREG 1474, "Effect of Hurricane Andrew on the Turkey Point Nuclear Generating Station from August 20-30, 1992".

[11] SOER 02-1, "Severe Weather"

[12] W3 "Plant Shutdown" OP-010-005

[13] RBS "Severe Weather Operations" AOP-029

[14] Nuclear Management Manual Procedure OM-123, Working Hour Limits

[15] EN-EP-309, Fatigue Management For Hurricane Response Activities

3.0 DEFINITIONS

[1] Blizzard Warning - Issued for winter storms with sustained or frequent winds of 35 mph or higher with considerable falling and/or blowing snow that frequently reduces visibility to 1/4 of a mile or less. These conditions are expected to prevail for a minimum of 3 hours.

[2] Corporate Emergency Center (CEC) - Area on the first floor of Echelon Building equipped with a phone bank, computer lines and TV hookups. This area is used to respond to emergencies at one of the sites.

[3] Debris – the remains of something used; something out of place.

[4] Flash Flood Watch - Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area, but the occurrence is neither certain or imminent.

[5] Flash Flood Warning – Issued to inform the public, emergency management and other cooperating agencies that flash flooding is in progress, imminent, or highly likely.

[6] Freezing Rain - Rain that falls as a liquid but freezes into glaze upon contact with the ground.

[7] High Wind Warning –Issued by the National Weather Service when high wind speeds may pose a hazard or is life threatening. High wind is sustained wind speeds of 40 mph or greater lasting 1 hour or longer, or winds of 58 mph or greater for any duration. The criteria for warnings vary from state to state.

[8] Hurricane – A tropical cyclone in the Atlantic, Caribbean Sea, Gulf of Mexico, or eastern Pacific, which the maximum 1-minute sustained surface wind is 64 knots (74 mph) or greater.

[9] Hurricane Responders – Synonymous with Severe Weather Responder. Selected Emergency Response Organization positions (two shifts) and additional personnel.

[10] Hurricane Season – The period of June 1 through November 30 each year in which conditions are favorable for hurricane development.

[11] Hurricane Watch – An announcement that hurricane conditions (sustained winds of 74 mph or higher) are *possible* within the specified coastal area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane watch is issued 48 hours in advance of the anticipated onset of tropical-storm-force winds.

[12] Hurricane Warning – An announcement that hurricane conditions (sustained winds of 74 mph or higher) are *expected* somewhere within the specified coastal area. Because hurricane preparedness activities become difficult once winds reach tropical storm force, the hurricane warning is issued 36 hours in advance of the anticipated onset of tropical-storm-force winds.

[13] Inland Tropical Storm Watch – Issued for interior counties when sustained winds of 39 to 73 mph associated with a tropical storm are possible within 36 hours.

[14] Inland Tropical Storm Warning – Issued for interior counties when sustained winds of 39 to 73 mph associated with a tropical storm are expected within 24 hours.

[15] Inland Hurricane Watch – Issued for interior counties when sustained winds of 74 mph or greater associated with a hurricane are possible within 36 hours.

[16] Inland Hurricane Warning – Issued for interior counties that sustained winds of 74 mph or greater associated with a hurricane are expected within 24 hours.

[17] Maximum Sustained Surface Wind –When applied to a particular weather system, refers to the highest one-minute average wind (at an elevation of 10 meters with an unobstructed exposure) associated with that weather system at a particular point in time. NOAA data on wind speeds is averaged over an 8 minute period for buoys and a 2 minute period for land situations.

[18] Saffir - Simpson Hurricane Wind Scale – The Saffir-Simpson Hurricane Wind Scale is a 1 to 5 categorization based on the hurricane's intensity at the indicated time. The scale provides examples of the type of damage and impacts in the United States associated with winds of the indicated intensity. In general, damage rises by about a factor of four for every category increase. The maximum sustained surface wind speed (peak 1-minute wind at the standard meteorological observation height of 10 m [33 ft] over unobstructed exposure) associated with the cyclone is the determining factor in the scale. The scale does not address the potential for other hurricane-related impacts, such as storm surge, rainfall-induced floods, and tornadoes.

(a) Category 1 74 - 95 mph

(b) Category 2 96 - 110 mph

(c) Category 3 111 - 130 mph

(d) Category 4 131 - 155 mph

(e) Category 5 Over 155 mph

[19] Severe Thunderstorm – A thunderstorm that produces a tornado, winds of at least 58 mph (50 knots), and/or hail at least ¾" in diameter. Structural wind damage may imply the occurrence of a severe thunderstorm. A thunderstorm wind equal to or greater than 40 mph (35 knots) and/or hail of at least ½" is defined as approaching severe.

[20] Sleet - Sleet is defined as pellets of ice composed of frozen or mostly frozen raindrops or refrozen partially melted snowflakes. These pellets of ice usually bounce after hitting the ground or other hard surfaces. Heavy sleet is a relatively rare event defined as an accumulation of ice pellets covering the ground to a depth of ½" or more.

[21] Snow Flurries - Snow flurries are an intermittent light snowfall of short duration (generally light snow showers) with no measurable accumulation (trace category).

[22] Snow Showers - A snow shower is a short duration of moderate snowfall. Some accumulation is possible.

[23] Storm Surge - An abnormal rise in sea level accompanying a hurricane or other intense storm, whose height is the difference between the observed level of the sea surface and the level that would have occurred in the absence of the cyclone. Storm surge is usually estimated by subtracting the normal or astronomic tide from the observed storm tide.

[24] Storm Tide – The actual level of sea water resulting from the astronomic tide combined with the storm surge. Most NWS flood statements, watches, or warnings quantifying above-normal tides will report the Storm Tide.

[25] Sustained Wind –Wind speed determined by averaging observed values over a two-minute period.

[26] Tornado – A violently rotating column of air, usually pendant to a cumulonimbus, with circulation reaching the ground. It nearly always starts as a funnel cloud and may be accompanied by a loud roaring noise. On a local scale, it is the most destructive of all atmospheric phenomena.

[27] Tornado Warning – Issued by local NWS offices to warn the public that a tornado has been sighted by storm spotters, law enforcement or has been indicated by radar.

[28] Tornado Watch - Issued to alert the public that conditions are favorable for the development of tornadoes

[29] Tropical Depression – A tropical cyclone in which the maximum 1-minute sustained surface wind is 33 knots (38 mph) or less.

[30] Tropical Storm – A tropical cyclone in which the maximum sustained surface wind speed (using the U.S. 1-minute average) ranges from 34 kt (39 mph or 63 km/hr) to 63 kt (73 mph or 118 km/hr).

[31] Tropical Storm Watch – An announcement that tropical storm conditions (sustained winds of 39 to 73 mph) are *possible* within the specified coastal area within 48 hours.

[32] Tropical Storm Warning – An announcement that tropical storm conditions (sustained winds of 39 to 73 mph) are *expected* somewhere within the specified coastal area within 36 hours.

[33] Watch – A watch is used when the risk of a hazardous weather or hydrologic event has increased significantly, but its occurrence, location, and/or timing is still uncertain. It is intended to provide enough lead time so that those who need to set their plans in motion can do.

[34] Warning – A warning is issued when a hazardous weather or hydrologic event is occurring, is imminent, or has a very high probability of occurring. A warning is used for conditions posing a threat to life or property.

[35] Wind Speed (NWS) - The rate at which air is moving horizontally past a given point. It may be a 2-minute average speed (reported as wind speed) or an instantaneous speed (reported as a peak wind speed, wind gust, or squall).

[36] Winter Storm Warning - issued by the National Weather Service when a winter storm is producing or is forecast to produce heavy snow or significant ice accumulations. The criteria for this warning can vary from place to place.

[37] Winter Storm Watch - This product is issued by the National Weather Service when there is a potential for heavy snow or significant ice accumulations, usually at least 24 to 36 hours in advance. The criteria for this watch can vary from place to place.

4.0 RESPONSIBILITIES

[1] Each site General Manager, Plant Operations and/or the Duty Plant Manager is responsible for the overall implementation of this procedure.

[2] Each site Emergency Planning and Emergency Response Facility Manager is responsible for:

(a) Notifying personnel of response plans as soon as possible.

(b) Implementation of this procedure.

[3] Each site Duty Emergency Planner is responsible for:

(a) Assisting in the assignment and coordination of activities necessary to implement this procedure.

(b) Tracking any Tropical Depression (W3), Tropical Storm or Hurricane in the Gulf of Mexico and informing the Control Room and site management of changing

conditions until National Weather Service data indicates the storm no longer represents a potential threat to the area.

[4] Each site Duty Emergency Operations Facility (EOF) Director is responsible for:

(a) Assisting in the assignment and coordination of activities necessary to implement this procedure.

[5] Severe Weather/Hurricane Responders are responsible for:

(a) Reporting for work as scheduled, unless relieved of emergency response duties.

(b) Remaining at work as long as necessary.

[6] All site personnel are responsible for:

(a) Performing actions outlined in this procedure as assigned.

(b) Reporting for work as scheduled until released by site management.

(c) Reporting to work as soon as conditions allow (roads are passable) after hurricane passage.

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

None

5.2 The implementation of this procedure is at the discretion of the Site General Manager Plant Operations, Duty Plant Manager or designee. They may implement this procedure in total or only those steps that they deem appropriate.

5.3 Entry into this procedure is driven by each site's specific operation procedure or at the discretion of site management.

5.4 Each site will review and complete the applicable steps of Attachment 9.1 for severe weather preparations. W3, RBS and GGNS will use Attachment 9.2, Attachment 9.3 and Attachment 9.4 respectively for site specific checklist actions. Completion of these checklists may vary from site to site depending on geographical location, storm path, threat condition, and potential impact of wind and storm surge.

5.5 Just prior to hurricane season (June 1) the following activities should be performed if applicable:

[1] Testing of satellite communications equipment. (Waterford 3 specific guidelines are provided in table 9.2.13)

[2] Testing of the Entergy Employee Info Line.

[3] All hands meetings for employees to address hurricane response policy issues, personal hurricane preparations and lessons learned from actual events. This is a Waterford specific guideline but other sites may implement as appropriate.

[4] Management tabletop or other drill activity driven by a hurricane scenario to test severe weather decision making and identify program improvements. Preferred tabletop format is a joint tabletop with NRC and parish/county participation. This is a Waterford specific guideline but other sites may implement as appropriate.

[5] Hurricane/Storm charge numbers may be identified by Site Business Services to track cost. These numbers should be communicated to site personnel.

[6] Emergency Planning walk down of hurricane storage area.

[7] **[For WF3 only]** At the beginning of hurricane season, establish (and maintain throughout season) a Family Coordinator's pack to include: laptop computers and travel bag; folders; jump drives – loaded with database; list of contact numbers such as CEC, contact information for rooms, credit card information, and non-504 cell phones.

NOTE

Schedules will be developed under EN-OM-123, Fatigue Management Program, and EN-EP-309, Fatigue Management for Hurricane Response Activities.

5.6 Employee Response Requirements

[1] Staffing of emergency response facilities with personnel responding from offsite at the time an emergency is declared may not be possible due to hazardous road conditions. Consequently, Severe Weather Responders may be staged onsite prior to the arrival of the hurricane as a precautionary measure.

[2] Severe Weather Responders assist as needed to secure the affected site and staff Emergency Facilities.

(a) All Severe Weather responders are required to report for work as scheduled unless directed otherwise by site Emergency Response Management.

(b) The company assists with preparations for families of Entergy personnel by providing a Corporate Emergency Center (CEC) contact to address their needs. At a minimum, this contact assists in locating a place for families of severe weather responders to stay, as necessary.

[3] Checking the Employee Info Line:

(a) When the local area is in a Hurricane Watch, then employees check the Entergy Info Line for information immediately upon becoming aware of the condition and periodically in accordance with directions provided on the voice recording or approximately every 8 hours if specific directions are not provided.

(b) When the local area is in a Hurricane Warning, then employees check the Entergy Info Line for information immediately upon becoming aware of the condition and periodically in accordance with directions provided on the voice recording or at a minimum at 9:00 a.m., 1:00 p.m., 5:00 p.m., and 9:00 p.m. each day until the hurricane threat is secured.

[4] All Severe Weather Responders are required to report to work as scheduled unless directed otherwise by Emergency Response Management.

(a) Notification from a Supervisor that an individual does not have to report for normal work is not sufficient to release that individual from his emergency response duties and he is expected to report for work.

(b) Only the Duty Plant Manager or designee may release plant response personnel and this should be noted in the Command Center logs.

Section 5.6 cont'd

[5] Callout of Severe Weather Responders

(a) Callout is expected to occur by activation of the automated callout system or other methods when a Warning is issued for the site area or based on other factors such as local area mandatory evacuations or implementation of traffic contra-flow.

(b) Severe Weather Responders report to the site as soon as possible after the notification.

(c) Because responders may have to remain at the site until the storm passage (possibly a period of 3-5 days), Severe Weather responders should bring personal items such as a change of clothes, toiletries, etc., when responding to the site, plan to remain at the site for 5 days.

(d) Food, water, and sleeping accommodations are provided.

[6] Some individuals may be released after a watch-bill has been established <u>and</u> the site has been secured.

5.7 Weather Conditions

[1] Outside activities should be kept to a minimum as the severe weather approaches. Hurricane winds and possible tornadoes are a personnel safety hazard. Personnel should be directed to seek shelter before sustained wind speeds reach 40 mph on-site or as designated by Management.

[2] Tornado formation due to a tropical storm is most favorable in the right front (NE) quadrant at 50 to 200 miles from the eye of the storm. On average, most tornadoes are spawned on the day of landfall, or the day after. Tornadoes can occur at any time of the day or night during landfall; however, by 12 hours after landfall, tornadoes tend to occur mainly during daytime hours.

[3] Do not assume that the hurricane has passed when winds subside and rain stops. This is most likely the EYE of the hurricane. In about one hour the winds will begin blowing again from the opposite direction as the second half of the hurricane passes.

[4] Increased awareness should continue until the National Weather Service advises there is no longer a threat to the site area.

[5] In case of Ice storms, tornadoes or other severe weather conditions, each site may use the applicable sections of the general or specific checklist as appropriate.

6.0 INTERFACES

6.1 Operations Severe Weather interface documents

[1] Waterford

(a) Operations Procedure OP-901-521, "Severe Weather and Flooding"

(b) Operations Procedure OP-002-007, "Freeze Protection and Temperature Maintenance"

[2] River Bend

(a) Abnormal Operating Procedure AOP-0029, "Severe Weather Operation"

(b) Operations Procedure OSP-0043, "Freeze Protection and Temperature Maintenance"

[3] Grand Gulf

(a) Off-normal Event Procedure "Hurricanes, Tornadoes, and Severe Weather" 05-02-V1-2

(b) Off-normal Event Procedure "Flooding" 05-1-02-V1-1

(c) "Equipment Performance Instruction" 04-1-03-A30-1

[4] Arkansas Nuclear One

(a) ANO Management Manual A3.103, "Plant Preparation for Tornadoes"

(b) Unit 1 Normal Operating Procedure 1104.039, "Plant Heating and Cold Weather Operation"

(c) Unit 1 Abnormal Operating Procedure 1203.025, "Natural Emergencies"

(d) Unit 2 Normal Operating Procedure 2106.032, "Unit Two Freeze Protection Guide"

(e) Unit 2 Abnormal Operating Procedure 2203.008, "Natural Emergencies"

[5] EN-OM-123, Fatigue Management Program

[6] EN-EP-309, Fatigue Management for Hurricane Response Activities

7.0 RECORDS

[1] No quality records are associated with this procedure.

[2] The non quality records have no retention requirements. The responsible Manager will maintain records for lessons learned purposes.

8.0 SITE SPECIFIC COMMITMENTS

Step	Site	Document	Commitment Number or Reference
[1]	None		
[2]			

9.0 ATTACHMENTS

9.1 General Severe Weather Response and Recovery Checklist

9.2 W3 Specific Severe Weather Checklist

9.3 RBS Specific Severe Weather Checklist

9.4 GGNS Specific Severe Weather Checklist

9.5 Echelon Specific Severe Weather Checklist

9.6 Suggested Emergency Supplies

9.7 NRC Administrative Letter 97-03

9.8 Hurricane Responders Family Information Sheet

9.9 Severe Weather Missile Hazard Reduction Standard

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

Sheet 1 of 13

Note

The implementation of this procedure is at the discretion of the Site General Manager, Duty Plant Manager, or designee. He/she may implement this procedure in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, time before storm arrival, existing outside conditions, plant status, site accessibility, availability of inside storage space, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated.

Group responsible is suggested only. The task assignment may vary from site-to-site. Step may be signed by someone knowledgeable (Duty EP, Duty Plant Manager, GM, etc) that the task was completed. This form or a similar form may be used.

Note

Schedules will be developed under EN-OM-123, Fatigue Management Program, and EN-EP-309, Fatigue Management for Hurricane Response Activities.

ITEM	GROUP RESP	Start/Complete/NA
Storm preparations, Staffing and Personnel safety Consideration		
1. Severe Weather duty roster established.	(EP)	____/ ____/ ____
2. Consider "freezing" the duty roster to prevent confusion if preparation activities carry over into the next duty changeover date.	(EP)	____/ ____/ ____
3. Duty roster should include engineering and other technical resources including maintenance expertise that may be needed in the early stages of post-event troubleshooting and restoration activities. (i.e. Security system qualified Maint) Consider maintenance planners on roster or staged at a remote location. [Hurricane Gustav OE CR-HQN-2008-00761]	(EP)	____/ ____/ ____
4. Severe Weather Responders briefed on personal, plant, family preparations prior to callout. Ensure hurricane responders complete "Family Members Information Sheet" Attachment 9.8.	(EP)	____/ ____/ ____
5. When possible, secure all unnecessary work on-site and release non-essential personnel.	(GM) (Maint)	____/ ____/ ____
6. Consider sending out a site broadcast to all personnel. This site broadcast should indicate that all shared resources must be coordinated through the CIRT/CEC located at Echelon.	(EP)	____/ ____/ ____
7. All visitors have left the site	(Security)	____/ ____/ ____
8. When possible, release Severe Weather Responders and other designated additional personnel required to be on-site to attend to personnel issues. Have them prepared to report back to the site as designated by Duty Manager. Date/Time: _____	(GM)	____/ ____/ ____
9. Consider supplying transportation to response personnel to minimize personal vehicles onsite.	(GM) (EP)	____/ ____/ ____
10. Additional personnel to support operations and maintenance notified.	(Ops) (Maint)	____/ ____/ ____

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

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11. Additional personnel to support operations and maintenance briefed.	(Ops) (Maint)	____/ ____/ ____
12. [For **ANO** only] Verify intake screens remain operational	(OPs)	____/ ____/ ____
13. [For **ANO** only] Recruit personnel to help man the call center in Little Rock at 9th and LA	(HR)	____/ ____/ ____
14. [For **ANO** only] Computer Support to be called out if London Line is lost to drop loads and ensure key databases and network functions are maintained	(OPs)	____/ ____/ ____
15. Alternate site (Reactor Auxiliary Building, Backup EOF, etc.) identified for staging of response personnel based on NWS wind and flood projections.	(EP)	____/ ____/ ____
16. Identify location to serve as Storm Monitoring Center / Command Center (i.e., Adm Conference Room, EOF, OSC, TSC)	(EP)	____/ ____/ ____
17. Develop a briefing sheet to be distributed to Severe Weather responders when activated to the site to address basic questions regarding organization, sleeping, food, etc.	(EP)	____/ ____/ ____
18. Evaluate the need to complete an Exemption / Authorization for severe weather responders exceeding working hour limits in accordance with NMM procedure OM-123.	(GM)	____/ ____/ ____
19. Identify and notify additional VP and GMPO support personnel who would be called to the site to relieve sequestered personnel.	(VP)	____/ ____/ ____
20. Conduct operator briefings and/or team simulator training to prepare for possible transients and circumstances which may be caused by the storm or storm related system failures. (i.e. loss of offsite power)	(Ops) (Training)	____/ ____/ ____
21. Consider / obtain the following contingencies for loss of the following:	(EP) (MP&C)	____/ ____/ ____

EQUIPMENT LOSS	CONTINGENCY
a. ENS/Operational Hotline	a. Satellite Telephone
b. EOF Ventilation System	b. EOF diesel operating and EOF communications room air conditioners running.
c. Electrical power to MSB/Serv bldg	c. Portable generator/reduced loads
d. Electrical power to GSB	d. Portable generator/reduced loads
e. Reference Library	e. Disaster Recovery system

Site Preparations – Grounds and Buildings

22. Survey the plant site, including areas outside the protected area such as the security firing range, training center and other out buildings. Removing trash and debris and secure all loose equipment such as ladders, fire extinguishers, and hose reels, waste containers, life rings, etc. To the extent practical, have loose materials around the owner controlled area that could become missiles removed, stored, or securely tied down (i.e. pipes, boards, tools, and other materials that could be picked up by the wind and hurled through the air at hurricane speeds and cause damage to the plant, site structures or personnel. Refer to **Attachment 9.9**, Severe Weather Missile Hazard Reduction for guidance on "how to" secure loose equipment.	(Maint) (Security)	____/ ____/ ____
23. Tie-down trailers and portable buildings with cables and ropes.	(Maint)	____/ ____/ ____
24. Review work and surveillance schedule to identify activities which may need to be performed early, or delayed, as permitted by Technical Specifications	(Planning)	____/ ____/ ____
25. Remove all gas bottles from exterior storage racks, and have them properly secured inside.	(Maint)	____/ ____/ ____
26. Verify doors and covers on outside equipment such as Transformers, Switchyard equipment, Fire Hose Stations, and Electrical Panels are securely closed.	(Maint) (Ops)	____/ ____/ ____
27. Check site drainage ditches and culverts for blockage. Have blocked channels cleared, if necessary.	(Maint)	____/ ____/ ____
28. Protect exposed windows and doors with plywood and/or tape, as applicable.	(Maint)	____/ ____/ ____
29. Close outside rollup doors.	(Maint) (Ops)	____/ ____/ ____
30. Predetermine if existing electrical services to temporary site facilities should be shutdown. Establish a time frame for such action if deemed necessary and implement the shutdown.	(Maint) (Ops)	____/ ____/ ____
31. All site vehicles topped off with gasoline and keys brought to designated area.	(EP) (Maint)	____/ ____/ ____

32. Ensure emergency vehicle repair equipment is on hand (i.e., flat tire materials, extra gas, oil, etc.) (Maint) _____/ _____/ _____

33. Secure vehicles out of path of Severe Weather or inside if possible. (Maint) _____/ _____/ _____

34. Consider installing temporary flood barriers (sandbags or equivalent) in areas which may be susceptible to flooding (Turbine Building Switchgear W3). Stage additional temporary flood barriers near susceptible areas. Check quantities and obtain additional temporary flood barriers if necessary. Have security personnel observe filling so as not to delay their entering the plant, if applicable. (See Table 9.1.1 for details on building sandbag dike) Consider pre-staging adequate drain plugs, de-watering pumps and hoses. (See Table 9.1.1 for direction on building a sandbag dike) (Maint) (Security) _____/ _____/ _____

35. Evaluate need to unplug and store any temporary Security lights and extension cords that may be in service. (Maint) (Security) _____/ _____/ _____

36. Consider initiating the following actions for Plant Support buildings
    - Move important records to an elevated position away from windows
    - Move high value portable equipment to an elevated area away from windows and cover with plastic.
    - Power down, unplug, and then move personal computers and printers away from offices with unprotected windows, if unable to move, cover with plastic and tape securely. Backup data as necessary and unplug work station. (Maint) (IT) _____/ _____/ _____
    - Secure unnecessary power to facilities and equipment to reduce the likelihood of fire.
    - Cover sensitive equipment as necessary
    - Ensure doors to rooms with windows are closed. Ensure windows and blinds are closed.
    - Cover fireproof file cabinets containing QA records with plastic.
    - Put loose items, such as desktop supplies, papers, etc., in desk drawers or file cabinets.
    - Wrap simulator computers in plastic and tape securely.
    - Log actions taken and give to the Command Center Lead to include in the recovery plan.

37. Consider storing equipment off the ground floor and away from windows: • Laboratory equipment • Instruments • Photocopying equipment • Communication equipment	(Maint)	____/ ____/ ____
38. Ensure that temporarily stored hazardous chemicals are moved inside buildings.	(Maint/ Chem)	____/ ____/ ____
39. Evaluate need to lower and secure high-mast security lighting.	(Maint) (Security)	____/ ____/ ____
40. Evaluate need to start and test alternate electric supply to TSC/EOF (i.e. diesel, UPS)	(EP) (Ops)	____/ ____/ ____
41. Evaluate need to provide for disposal of human waste at remote stations since the sewage system may be out of service.	(Maint) (Env)	____/ ____/ ____
42. Evaluate need to open all outdoor 480V receptacles circuit breakers.	(Maint) (Ops)	____/ ____/ ____
43. Evaluate the need to wrap, elevate, relocate or otherwise protect spare motors, parts and/or tools that may be required for recovery.	(MP&C)	____/ ____/ ____
44. Consider assigning someone to video tape plant area prior to storm and again immediately after storm for event record and insurance purposes.	(GM)	____/ ____/ ____
45. Evaluate if Emergency Medical coverage is needed. (i.e. First responders, EMTs, Doctor, Nurse)	(EP)	____/ ____/ ____

Site Preparations- Tools and Equipment

46. Expand stowing and securing of equipment to include relocation or anchoring of radioactive or potentially radioactive items, such as, materials (sources, etc.) in stores facilities, sea-land containers, radiography equipment, etc.	(RP)	____/ ____/ ____
47. Consider de-posting of outside radioactive materials areas (procedure deviation) to prevent stanchions from becoming missiles.	(RP)	____/ ____/ ____

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

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48. Notify Radwaste to limit the transport of offsite waste disposal until after the hurricane.	(RP)	
• Consider treating and discharging liquid Radwaste tanks prior to the storm arrival or loss of power.	(Chem)	____/ ____/ ____
49. Consider lifting radioactive materials off the ground surface.	(RP)	____/ ____/ ____
50. Move electric carts, forklifts, movable cranes and emergency response equipment and supplies into buildings.	(Maint)	____/ ____/ ____
51. All stationary/movable cranes secured/moved to an area out of path of hurricane and/or raise all crane hooks to the top, and install lock bolts as necessary.	(Maint)	____/ ____/ ____
52. Fuel pool is safe from falling overhead objects, and cranes are secure.	(Ops) (Maint)	____/ ____/ ____
53. Establish a tool and spare parts area in a secure location to provide a minimum number of tools for each maintenance discipline to use in an emergency. Ensure a sufficient number of chain saws are available.	(Maint)	____/ ____/ ____
54. Provide backup emergency equipment for fire suppression, flood protection, power supplies, etc.	(Ops) (Maint)	____/ ____/ ____
55. Consider a portable generator to carry some nonessential loads.		
• Review lesson learned from prior storms (e.g., Katrina, Rita, Gustav, Ike) and identify where and how many portable generators may be needed.	(Maint) (MP&C) (EP)	
• Obtain necessary portable generators, connectors, cords, etc.		____/ ____/ ____
56. Verify operability of EOF diesel generator, if applicable.	(Maint)	____/ ____/ ____
57. Ensure fuel available for EOF diesel generator, if applicable.	(Maint)	____/ ____/ ____
58. Move butt cans and trash cans inside buildings.	(Maint)	____/ ____/ ____

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

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59. Verify adequate supplies of fuel, hydrogen, chemicals, carbon dioxide etc. for emergency use before the storm strikes and to prevent a required delivery during the storm. Ensure adequate inventories of water treatment chemicals and oxygen-scavenging and pH control chemicals, i.e. hydrazine, morpholine, lithium hydroxide are available and in plant to support unit shutdown, as applicable	(Ops)	
• Consider topping off fuel for the IT Building diesel, site gas and diesel tanks and other miscellaneous fuel tanks.	(MP&C)	
• Procure supplies early enough to ensure required chemical analyses or special storage is completed before the storm arrives. [Hurricane Gustav OE CR-HQN-2008-00777]		____/ ____/ ____
• Ensure portable generators are available (**and fueled**) to run site fuel depot, if applicable		
60. Return all inoperable equipment or systems to service, if possible, priority to be set by Operations in anticipation of a loss of Off-site power.	(Ops)	____/ ____/ ____
61. Consider backups of Emergency computer equipment and application software.	(EP)	____/ ____/ ____
62. Set up portable radios, televisions and internet accessible computers in response facilities to provide news reports and hurricane position information.	(EP)	____/ ____/ ____
63. Accumulate additional portable communications equipment (including cellular telephones) in the response facility.	(EP)	____/ ____/ ____
64. Verify operability of emergency communications equipment and charge satellite phone batteries.	(EP)	____/ ____/ ____
65. Establish plan for alternate method of communicating if normal methods are lost. Verify levels below are available.		
• Primary communication method - Land lines		
• Secondary – Computer (VOIP, e-mails)		
• Third – Cell phones/Nextel phones		
• Fourth – Satellite	(EP)	____/ ____/ ____
66. Obtain "Port-o-lets" or other sanitation facilities for personnel remaining on site and stage inside buildings (Turbine/Aux/Control etc.). Identify sanitation facilities for male and female use.	(Maint)	____/ ____/ ____

ATTACHMENT 9.1 GENERAL SEVERE WEATHER RESPONSE CHECKLIST

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67. Move microwave ovens from various locations outside the plant to designated eating areas.	(Maint)	____/ ____/ ____
68. Extra SCBAs and charged bottles are prepared and in suitable location.	(RP)	____/ ____/ ____
69. Establish a "ready list" with any critical selected vendors, suppliers, and contractors identified to provide materials and personnel.	(Maint) (MP&C)	____/ ____/ ____
70. Consider staging a high ground clearance vehicle in a location to shuttle personnel in and out of site.	(Maint)	____/ ____/ ____
71. Ensure sufficient lubricating oil for Safety Related equipment is available and moved from warehouse to inside plant.	(Maint) (Ops)	____/ ____/ ____
72. Evaluate the equipment need for debris clearing.	(Maint)	____/ ____/ ____
73. Consider contingencies for losses of security equipment.	(Security)	____/ ____/ ____

Site Preparations-Supplies and Personnel Safety

74. Verify sufficient emergency supplies are available and staged.	(EP)	____/ ____/ ____
75. Stage water for both drinking and sanitation purposes. • [For **WF3** only] Maintenance construction provides two 300 gallon tanks for this purpose	(Maint)	____/ ____/ ____
76. Use cafeteria staff to prepare food and beverages as long as possible until they have to evacuate.	(EP)	____/ ____/ ____

77. Order food supplies from cafeteria supplier and set up food in designated areas. Ensure additional help is available to stock cafeteria prior to core team reporting to the plant. Cafeteria Support provides ice chests, coolers, hand trucks, etc. to prepare for movement of food services to the designated areas when necessary. Hurricane Gustav OE: Adequate food supplies for lockdown conditions were not available for Hurricane Gustav. Increase food/water/ice for at least 3 days under lock down conditions.	(EP)	____/ ____/ ____
78. Ensure adequate medical supplies are available and stored in designated area.	(EP)	____/ ____/ ____
79. Install life lines between or around important operating equipment areas as needed. Determination made by Operations staff.	(Ops)	____/ ____/ ____
80. Unnecessary vehicles removed from the protected area and parking lots.	(Security)	____/ ____/ ____
81. Arrangements made for the accommodation of employees' families if necessary. Request Echelon help as needed if Hotel accommodations are required.	(GM) (EP)	____/ ____/ ____
82. Family Support Coordinator(s) and Jackson Response Team members identified, briefed, and pre-staged.	(EP)	____/ ____/ ____
83. Ensure Entergy Info Line is ready for use. Disseminate Severe Weather Entergy Info Line number to site personnel. (See Table 9.5.7 page 11 of 12 for update instructions)	(EP)	____/ ____/ ____
84. Ensure communications are available to allow employees to check with families.	(EP)	____/ ____/ ____
85. Identify critical employees and/or work groups for recovery and relief response duties and establish a link with their supervision.	(EP)	____/ ____/ ____
86. CEC (Corporate Emergency Planning if CEC not staffed) notified to coordinate Lodging needs as necessary <u>and</u> to identify telephone bank operators, putting them on standby. Coordinate with Entergy non-nuclear storm response team.	(EP)	____/ ____/ ____

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

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87. Provide a list of names of personnel that will remain on site for the duration of the storm to the Corporate Emergency Center. (EP) ____/ ____/ ____

88. Evaluate need to isolate the Halon Systems (including battery backup power) in occupied areas. (Ops) ____/ ____/ ____

89. Ensure fuel tanks are topped off as necessary and stage fuel trucks in appropriate areas. Arrange with the diesel oil suppliers for possible emergency deliveries for site emergency diesels and offsite fuel analysis, as required. (Ops) ____/ ____/ ____

90. Verify RWPs are available to support storm activities. (RP) ____/ ____/ ____

91. Ensure all persons remaining on-site during the storm are properly trained and have a DLR. (RP) ____/ ____/ ____

Coordination of Activities

92. Verify staffing of the Corporate Emergency Center (CEC) in Jackson. (EP) ____/ ____/ ____

93. Review Industrial Safety procedures. Communicate tornado safe area locations or alternate fire evacuation points if necessary due to weather hazard (Safety) ____/ ____/ ____

94. Monitor weather information from the National Weather Service, the National Hurricane Center, and Entergy storm forecasters in order to determine the most probable site forecast.

    - Impact weather is the preferred source. Ensure all sites are using the same source for data used in decision making. (EP) ____/ ____/ ____

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

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95. Participate in both management and executive conference calls with the Entergy Transmission and Distribution emergency response team. (EP) ____/ ____/ ____

96. Maintain periodic contact and coordinate response with County/Parish and State agencies and the National Weather Service. Confirm Parish or County response and evacuation plans and any actions that may affect the ability to bring responders to the site (bridge closures). (EP) ____/ ____/ ____

97. Establish a staging location for recovery team following the hurricane and ensure the location is known to plant personnel. (EP) ____/ ____/ ____

98. Obtain a contact phone number of plant personnel who will not remain on site during the storm. (i.e., cell phone, home phone, next of kin) (HR) ____/ ____/ ____

99. Maintain periodic contact and coordinate response with the NRC resident inspectors and Region IV Incident Response Center personnel. Provide the following: (NSA) ____/ ____/ ____
    - Latest storm position, strength and projected path,
    - Site meteorology: (15 minute average wind speed and direction, precipitation)
    - Update of plant preparations/response
    - Update of Parish or County preparations/response
    - Provide copies of the latest NWS hurricane bulletin reports, including public advisories, probabilities and storm track to the resident inspectors (or alternates) as requested.

100. Establish daily briefing of NRC senior management by Entergy Nuclear South executive team. (VP) ____/ ____/ ____

Implementation

101. Update Entergy Info Line messages (if applicable) (See Table 9.5.7 page 11 of 12 for update instructions) throughout the event to provide information and direction to employees and their families. Send Employee Info Line updated messages to the CEC as well as the site communications coordinator who supports the plant offsite and provide copies in the Hurricane Command Center. (Comm/EP) ____/ ____/ ____

102. Make periodic plant page announcements with Shift Manager and/or Duty Plant Manager concurrence to update site personnel of storm status and response activities. (Consider making the announcements during turnover, 0500-0700 & 1700-1900, to limit disturbance to staff who may be sleeping) (Ops) ____/ ____/ ____

ATTACHMENT 9.1 **GENERAL SEVERE WEATHER RESPONSE CHECKLIST**

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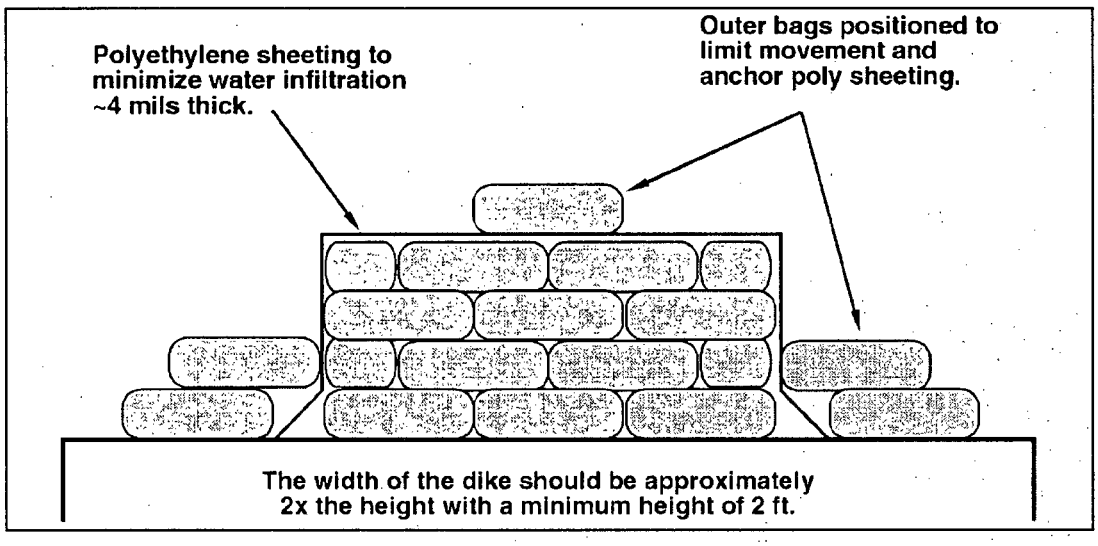
103. Establish accountability for all personnel on site. • [For **W3** only] Duty Plant Manager or EOF Director permission required to leave established protected areas or travel offsite with callback and/or return times. • [For **WF3** only] Consider performing accountability at some location other than the TSC. If the accountability station is relocated, then consider assigning another position other than the RAC to perform task.	(EP) (Security)	____/ ____/ ____	
104. Activate the Emergency Response Data System (ERDS) for NRC access of meteorological and other plant data when the NRC Incident Response Center is staffed.	(Ops)	____/ ____/ ____	
105. Station operations and/or maintenance personnel in vital areas prior to the storm. This applies to areas not accessible without going outside.	(Maint) (Ops)	____/ ____/ ____	
106. Limit access to all operable diesel generators.	(Ops)	____/ ____/ ____	
107. Evacuate unnecessary personnel in the protected area and all visitors in the Owner Controlled Area.	(Security)	____/ ____/ ____	
108. Provide a list of names that will remain on site for the duration of the storm to the Corporate Emergency Center (CEC).	(EP)	____/ ____/ ____	
109. Response logs initiated and kept up to date for the duration of the event for each response facility and major area of activity.	(EP)	____/ ____/ ____	
110. Consider application of 10CFR50.54(x) and (y) for protecting the plant, safety of personnel and public health and safety (i.e., suspension of safeguards, discontinuance of outside surveillance activities).	(Ops)	____/ ____/ ____	
111. Minimize security patrols as storm worsens.	(Security)	____/ ____/ ____	
112. Consider relocating outside security personnel, particularly any postings in elevated areas. Winds may be higher in elevated levels than they are at ground level, even with relatively small elevation changes.	(Security)	____/ ____/ ____	
113. Conduct periodic accountability checks or roll calls to ensure personnel remaining on site are present and accounted for.	(Security)	____/ ____/ ____	
114. Keep the telephone bank operators located at Echelon CEC updated on plant conditions, personnel accountability, weather conditions, Parish/County response, road conditions, and curfews. Status of road conditions and curfews is particularly important when the return to work message is given.	(EP)	____/ ____/ ____	
115. Following storm passage, provide by 0800 information to Family Coordinators on road conditions, evacuation status, reentry status, curfew, public works, electricity and necessities	(EP)	____/ ____/ ____	

TABLE 9.1.1
SANDBAG GUIDE



Side View of a Typical Sandbag Dike

NOTES:

1. The location of dikes placed along walls should be chosen to limit obstruction to equipment and components mounted on those walls.

2. Dike size and placement should be determined by field personnel based on the availability of sandbags and labor. Dike dimensions should be similar to those shown above.

3. Position sandbags used to protect doors on a side that will maintain building access. Consider constructing a dike in the shape of a horseshoe around the door if time and resources allow.

ATTACHMENT 9.2 W3 SPECIFIC SEVERE WEATHER CHECKLIST

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NOTE

The implementation of this procedure is at the discretion of the Site General Manager, Duty Plant Manager, Shift Manager or designee. He/she may implement this procedure in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, time before storm arrival, existing outside conditions, plant status, site accessibility, availability of inside storage space, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated. This form or a similar form may be used.

ITEM		GROUP RESP	Start/Complete/NA
Readiness/Coordination of Activities			
1	Coordinate with vendor for Temporary Emergency Diesel generators (TEDs). Consider obtaining additional diesel generators for things like MSB, GSB, lift stations and MSB food storage area. Contact electrical maintenance for details. This may occur early in an event before a storm enters the Gulf of Mexico because of contractual arrangements. Provide routing instructions to vendor based on storm track and the potential for highway contraflow conditions.	(DPM)	____/ ____/ ____
2	Pre-stage additional quantities of diesel fuel onsite in either tank truck or Baker tank. Insure that fuel is ordered early enough for sampling and analysis. Also insure that personnel are available to conduct sampling and analysis of diesel fuel. [Hurricane Gustav OE CR-HQN-2008-00777]	(DPM)	____/ ____/ ____
3	Implement 24 hour Severe Weather Command Center operations in the OSC Command Room to coordinate site preparations, handle employee communications, monitor media outlets for storm progress and keep Control Room/site management informed of changing conditions. Command Center personnel also provide coordination with parish, State and federal officials and the National Weather Service.	(EP)	____/ ____/ ____
4	Install plant page access and a voice mail message on the Command Center telephone directing phone traffic to other numbers as necessary for additional Command Center numbers.	(IT)	____/ ____/ ____
5	Notify Tele Com to activate satellite phones and consider the need for additional mobile based satellite units at the site based on severity of storm threat.	(IT)	____/ ____/ ____
6	Issue non-local area code cell phones to key personnel (VP, GMPO, etc.).	(IT)	____/ ____/ ____
7	Ensure corporate storm web site is updated with current Waterford 3 information.	(Corp EP)	____/ ____/ ____
8	Update jump drives with electronic files and provide to Family Coordinators	(EP)	____/ ____/ ____
9	Perform test of ENS line and ERDS prior to arrival of storm	(EP)	____/ ____/ ____
10	Supply Command Center with necessary equipment, including pens, markers, tape, easels, flip chart and markers for elevator lobby and paper, notepads, external use cellular telephones, applicable procedures including siren system EPP Procedures and weather alert radio, TV, internet access, etc. Use pre-staged supply of Command Center materials in the EP Department. Consider moving materials/supplies from the Simulator to the Command Center.	(EP)	____/ ____/ ____

ATTACHMENT 9.2 **W3 SPECIFIC SEVERE WEATHER CHECKLIST**

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11	Brief Electrical Maintenance personnel staged on site: • Restoration of electrical power to building after passage of storm (OSC, MSB, GSB, etc.) • Connection of TEDS • Power distribution drawings located in OSC, TSC, EOF and Echelon for EOF, MSB, and GSB.	(PME)	____/ ____/ ____
12	Communicate specific expectations for families/lodging contained in Table 9.2.11 – Employee Hurricane Information- to core team members to avoid vague guidance (consider used of email for communications of this information).	(DPM)	____/ ____/ ____
13	Move the hurricane response key ring from its storage location in The Emergency Planning Department to the Command Center.	(EP)	____/ ____/ ____
14	Maintain chronological logs in the Command Center using WEB EOC and manual logs (as necessary). Notify WEB EOC administrator to assign an event password and open event session for use.	(EP)	____/ ____/ ____
15	Set up computerized hurricane tracking programs and track the storm throughout the event at the Command Center location.	(EP)	____/ ____/ ____
16	Staff Command Center with sufficient numbers of Emergency Planners and support personnel to handle telephone traffic.	(EP)	____/ ____/ ____
17	Maintain periodic contact and coordinate response with County/Parish and State agencies and the National Weather Service. Confirm Parish or County response and evacuation plans and any actions that may affect the ability to bring responders to the site (bridge closures).	(EP)	____/ ____/ ____

Note

The information below must be confirmed because Parish plans may change for specific conditions associated with any given storm:

St Charles Parish – Category 2 or higher – Mandatory evacuation orders will be issued 40 hours prior to tropical storm force winds reaching the central Gulf coast.

St John Parish – Category 3 and higher – Mandatory evacuations no later than 30 hours prior to tropical storm force winds reaching the Louisiana southeast coast.

St Charles Parish Severe Weather Emergency Classification Levels:

Unusual Event: Issuance of a National Hurricane Center Advisory for a Tropical Storm or Hurricane within the Atlantic Basin, or a Tropical Depression within the Gulf of Mexico.

Alert: Tropical Depression, Tropical Storm or Hurricane in which National Hurricane Center's forecast predicts tropical storm force winds reaching the central Gulf Coast between Destin, Florida and Cameron, Louisiana within 72 hours or notification from the Governor's Office of Homeland Security and Emergency Preparedness that the National Guard has received the eighty-hour pre-landfall activation orders.

Site Area Emergency: Tropical Storm or Hurricane in which the National Hurricane Center's forecast predicts official landfall west of Destin, Florida or east of Cameron, Louisiana within the next 72 hours or Louisiana State Police has issued an official fifty-hour notice.

General Emergency: Hurricane in which the National Hurricane Center's forecast predicts official landfall west of Pascagoula, Mississippi or east of Morgan City, Louisiana within the next 60 hours or the Louisiana State Police have issued an official forty-hour notice.

16	Pre-write tagouts as necessary to turn out lights and reduce ventilation system noise (+46 Computer Room) in sleeping areas to prepare for bunking in the plant.	(OPs)	____/ ____/ ____
17	Move the two "line-of-sight" Louisiana Civil Defense frequency radios, operating instructions for each radio and the satellite communication units from storage locations in the Emergency Planning Department to the TSC.	(EP)	____/ ____/ ____
18	Move portable generator from storage locations in the 7B warehouse to +15 Turbine Building. These generators are only accessible by warehouse personnel.	(EP)	____/ ____/ ____
19	Consider filling gasoline cans stored in Emergency Planning 2B warehouse designated area and store in approved location that has best chance of weathering the storm. Use caution in considering RAB fire loading issues.	(WH)	____/ ____/ ____

NOTE

Hurricane supplies are kept in a dedicated storage trailer outside 2B Warehouse. Meals Ready to EAT (MREs or Heater Meals) are stored in an environmentally controlled area in 7B Warehouse.

20	Relocate dedicated hurricane supply storage trailer and MREs into TGB + 15.	(EP)	____/ ____/ ____
21	Consider staging a refrigerated truck onsite for food storage.	(EP)	____/ ____/ ____
22	Assign warehouse "gator" to food service in the Protected Area	(EP)	____/ ____/ ____
23	Hurricane Gustav OE: Temporary chiller to support TGB Switchgear Room was not sufficiently secured during passage of storm. Perform final site walk-down to ensure that temporary equipment to support severe weather is sufficiently tied down or otherwise secured	(Maint)	____/ ____/ ____
24	Stage Planners/Schedulers in sufficient numbers to support plant restart operations at a remote Entergy site such as ANO where their work can be conducted without the need to be physically present at WF3. [Hurricane Gustav OE CR-HQN-2008-00761]	(DPM)	____/ ____/ ____
25	Ensure that employees evacuating the site and who are expected to return to support start-up activities have access credentials to assist with passage through roadblocks.	(EP)	____/ ____/ ____

ATTACHMENT 9.2 **W3 SPECIFIC SEVERE WEATHER CHECKLIST**

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Readiness / Implementation

26. Establish severe weather duty roster and secure all other normal and emergency duty rosters until further notice. Notify employees using Employee Info line messages. Personnel that are scheduled as "on Duty" will be considered the primary responders for a hurricane and are expected not only to report for work as scheduled, but to remain as long as necessary. Ensure the roster is adjusted as necessary to provide for at least one engineer onsite for each major discipline as required for the predicted storm activity.	(EP)	____/____/____
27. Notify Severe Weather response personnel to report to site.	(EP)	____/____/____
28. Severe Weather Response personnel briefed upon arrival onsite.	(MNT/EP)	____/____/____
29. Response personnel assigned to shifts and collateral duties in accordance with established duty roster. Personnel meet with collateral duty leads for specific assignments and initial tasks. This can be performed during the briefing in step above.	(EP)	____/____/____
30. All site response personnel should remain located in central locations; Protected Area/GSB. Bunking will be limited to normal work locations within the Protected Area with the exception that Security personnel only may be allowed to bunk in the Admin Building.	(EP)	____/____/____
31. Food Service Lead to conduct meeting with food service personnel to assign food service duty activities	(EP)	____/____/____
32. Coordinate with Transmission & Distribution/CEC staff to determine if there is a need to bring T&D crews on-site with equipment to ride out storm and be ready for post-storm power restoration.	(EP)	____/____/____
33. Coordinate with Koch Nitrogen management/CEC staff to determine if there is a need to bring Koch crews on-site with equipment to ride out storm.	(EP)	____/____/____
28 Send periodic messages (at least every 4 hours) to NRC, Jackson Corporate Emergency Center and River Bend.	(EP)	____/____/____
29 Reprogram selected area telephones for long distance dialing to allow personnel to check on family members. Consider Maintenance Shops, Health Physics offices, Chemistry Lab, MSB Cafeteria.	(IT)	____/____/____
30 Adjust lights and ventilation in sleeping areas as necessary.	(OPs)	____/____/____
31 Emergency Planning personnel should be pre-staged in the Control Room to assist with Unusual Event notifications and response actions (step 28 below)	(DPM)	____/____/____

ATTACHMENT 9.2 **WF3 SPECIFIC SEVERE WEATHER CHECKLIST**

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32	Twelve hours prior to arrival of hurricane conditions onsite as projected by the National Weather Service, commence a Plant Shutdown as directed by Plant Management, in accordance with OP-010-005, Plant Shutdown. This action is in anticipation of a Loss of Off-site power.	(OPs)	____/____/____
33	At ≈ 30 mph sustained winds onsite with conditions expected to worsen significantly, relocate all operations to the Nuclear Island: Command Center, EOF Director (to TSC Emergency Control Center); OSC operations (to +7 RAB offices); Health Physics (to -4 CP from Westside Access); Food service operations (to +7 Chemistry Break Room); all personnel , including Security Staff (to +7RAB Offices). Other environmental considerations should include precipitation, wind loading on occupied structures, weather warnings and watches etc.	(DPM)	____/ ____/ ____
34	Take the TSC operational in accordance with EP-002-100 at 50 mph sustained winds onsite. Notify EC of internal connection under hub located under Health Physics Coordinator's desk Establish 24-hour coverage if not already performed and conduct shift turnover meetings between day and night shift. Consider "forced outage" type POD and POE meetings in the TSC or other meeting location.	(DPM)	____/ ____/ ____
35	Place CCTV monitors in continuous recording mode to collect visual historical data.	(SEC)	____/____/____
36	Minimize the use of the plant page to accommodate offshift personnel. Provide frequent status updates to personnel using written reports posted in the MSB Cafeteria (until all operations moved inside the plant), RAB elevator lobbies, and Primary Access Point (until all operations moved inside the plant). Plant page can be used during turnover periods (0500-0700 & 1700-1900) to communicate updated information.	(OPs)	____/____/____
37	Provide plant mode change comments to Security, RP and Chemistry when the plant page is not available.	(OPs)	____/____/____
38	Maintain family message board in MSB Cafeteria (relocated to +7 RAB elevator lobby when all operations moved inside the plant).	(TSCNE/DPC)	____/ ____/ ____
39	Issue site cellular telephones to key personnel, including General Manager Plant Operations, DPMs, EOF Directors, Duty Emergency Planners, OSC Supervisors, OSC Security Superintendent, Collateral duty leads. Consider forwarding applicable emergency facility telephone numbers to assigned cellular telephones.	(EP)	____/ ____/ ____
40	Provide frequent updates for the NRC, Jackson Response Team, Family Coordinators, Employee Info line (consider hourly updates).	(EP)	____/ ____/ ____

ATTACHMENT 9.2 **W3 SPECIFIC SEVERE WEATHER CHECKLIST**

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NOTE

Schedules will be developed under EN-OM-123, Fatigue Management Program, and EN-EP-309, Fatigue Management for Hurricane Response Activities.

TABLE 9.2.1
HURRICANE RESPONSE STAFFING

	POSITION PLANT STAFFING DURING STORM	NUMBER OF PERSONNEL Tropical Storm or Category 1 hurricane	NUMBER OF PERSONNEL Category 2 or higher hurricane
1.	2 Operations Crews* (Excluding Shift Support Center)	20 (Min)	20 (Min)
2.	Minimum OSC/Maintenance: OSC Supervisor (1/2), PME (2/4)*, PMI (4/4)*, PMM (2/4)* , PME Lead (1/2), PMM Lead (1/2), PMI Lead (1/2), Construction Support (3/6),	15	26
3.	Minimum TSC: DPM (EC 2/2), HPC/DAC (1/2), TSC Communicator (1/2),	4	6
4.	EOF: EOF Dir.(1/2), RAC/FTC (1/2), Communicator (1/2) - Emergency Planners can staff any of the communicator positions (TSC or EOF).	3	6
5.	Chemistry (Shift Technicians)	3	3
6.	Health Physics Technicians - ERO HPCs, RCCs, DACs, etc. can staff this position	11	11
7.	Radwaste	2	2
8.	Engineering		
	Engineering Supervision	1	2
	TSC Nuclear Engineer	1	1
	TSC Electrical Engineer	1	2
	TSC Mechanical Engineer	1	2
	Civil/Structures Design Engineers	0	1
9.	OSC Security Superintendent	1	2
10.	Security	---	---
11.	Qualified Crane Operator (may also be PMM in 2 above)	1	2
12.	IT Support (computer applications)	0	1
13	IT Support (telecommunications)	0	1
14.	Business Services Management	1	1
15.	Warehouse Support	1	2
16	Doctor/Nurse	0	2
17	Safety	0	2

Consider the need for Rescue Team qualified personnel on site.

TABLE 9.2.1 (cont)
HURRICANE RESPONSE STAFFING

	POSITION	NUMBER OF PERSONNEL
	SUPPLEMENTAL STAFF FOR SITE PREPARATION+	
	Maintenance Department Duty Crews - All Disciplines	~20
	PARISH/STATE ADVISORS**	6
	JACKSON RESPONSE TEAM – STAFFED AT CATEGORY 2 HURRICANE OR HIGHER	
1.	Duty Plant Manager / EOF Director or other management representative***	2
2.	RO/SRO***	2
3.	Emergency Planner	1
4.	Family Support Coordinator	2
5.	Site Communications Specialist	1
6.	Licensing Coordinator***	1
7.	Design Engineering Supervisor***	1
8.	Design Mechanical Engineer	1
9.	Design Electrical Engineer	1
10	Design Civil Engineer	1
11.	Telephone Talker/Monitor***	2

\+ These personnel will probably be released after site is secured.
** Located Offsite. Other plants' experience indicates this is a valuable resource in natural disasters to support offsite agency activities and act as liaison/point of contact with the plant organization. Position should be considered, but not required. May be a vital "first in" recovery position if not staffed before landfall.
*** Must be Waterford-3 domiciled individual

ATTACHMENT 9.2 W3 SPECIFIC SEVERE WEATHER CHECKLIST

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NOTE

All hurricane responders are required to report for work as scheduled unless directed otherwise by Waterford 3 emergency response management.

1. Notification from a Supervisor that an individual does not have to report for normal work is not sufficient to release that individual from his emergency response duties and he is expected to report to work.
2. Only the Duty Plant Manager may release plant response personnel or the Duty EOF Director for EOF responders.

TABLE 9.2.2

SUGGESTED HURRICANE DUTY ROSTER – TROPICAL STORM/CATEGORY 1 HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT (as necessary)
Emergency Coordinator (Duty Plant Manager)		Control Room Support/Command Center Liaison	Day
Emergency Coordinator (Duty Plant Manager)		Control Room Support/Command Center Liaison	Night
EOF Director		Command Center Lead	Day
Emergency Planning Manager		Command Center Lead	Night
Business Services Management		Food Service Lead	Day
EOF Communicator		Command Center/Bunking Support	Day
Duty Emergency Planner (2)		Command Center - Employee Info line / Government Liaison / Bunking Support	Day
Duty Emergency Planner (1)		Command Center - Employee Info line / Government Liaison / Bunking Support	Night
TSC Communicator		Continuous Accountability Monitor / Command Center Support	Night
Engineering Supervisor	Engineering Director	Bunking Lead	Day

"N/A" signifies a shift not assigned. Consider assigning some management on site to back shift when 2 shifts are required.

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER – TROPICAL STORM / CATEGORY 1 HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS THE "NAME" COLUMN FOR INFORMATION.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT (as necessary)
TSC Nuclear Engineer	Engineering Director	Message Boards/Internal Communications Lead (located in Command Center)	Day
TSC Mechanical Engineer	Engineering Director	Message Boards/Internal Communications Lead (located in Command Center)	Night
TSC Electrical Engineer	Engineering Director	Food Service	Day
Fire Watch personnel	Maintenance Support Supv.	Fire Watch	
Health Physics Coordinator/DAC	Emergency Planning Manager	Sanitation/Showers Lead	Day
Chemistry	Chemistry Superintendent	Food Service	Day
Chemistry	Chemistry Superintendent	Food Service	Night
Chemistry	Chemistry Superintendent	Food Service	N/A
Ionics Technician	Chemistry Superintendent	Food Service	Day
Radwaste	RP Manager	Food Service	Day
Radwaste	RP Manager	Food Service	Night
HP (6)	RP Manager	Sanitation/Showers	Day
HP (5)	RP Manager	Sanitation/Showers	Night
OSC Supervisor	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds Lead	Day
PMI (2) (1 with security background)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PMI (2) (1 with security background)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Night

"N/A" signifies a shift not assigned. Consider assigning some management on site to back shift when 2 shifts are required.

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER - TROPICAL STORM/CATEGORY 1 HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT
PME (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
PMM (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
PMI Lead	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
PME Lead	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
PMM Lead	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
Contractor Support (Carpenters/Laborers) (3)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
Qualified Crane Operator – May be PMM resource and not separate position	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
Rad. Assessment Coord./Field Team Controller	Emergency Planning Manager	Continuous Accountability Monitor/Command Center Support	Day
OSC Security Superintendent	Security Superintendent	Outside Grounds	Day
Security (SSS)	Security Superintendent	Outside Grounds	Day
Security (SSS)	Security Superintendent	Outside Grounds	Night
Warehouse Support	MP&C Manager	Food Service	Day
Operations Crew (Shift Manager)	Operations Manager	Plant Equipment/Plant Areas Cleanliness and Housekeeping	Day
Operations Crew (Shift Manager)	Operations Manager	Plant Equipment/Plant Areas Cleanliness and Housekeeping	Night

"N/A" signifies a shift not assigned. Consider assigning some management on site to back shift when 2 shifts are required

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER - CATEGORY 2+ HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION. NOTE: TO THE EXTENT POSSIBLE, KEEP MANAGEMENT OVERSIGHT PERSONNEL TO A MINIMUM.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT
Emergency Coordinator (Duty Plant Manager)		Control Room Support/Command Center Liaison	Day
Emergency Coordinator (Duty Plant Manager)		Control Room Support/Command Center Liaison	Night
EOF Director		Command Center/TSC Lead	Day
EOF Director		Command Center/TSC Lead	Night
Business Services Management		***Food Service Lead (Day)***	***Day***
Emergency Planning Manager		Command Center Support	N/A
EOF Communicator		Message Boards/Internal Communications Lead (located in Command Center)	Day
EOF Communicator		Message Boards/Internal Communications Lead (located in Command Center)	Night
Duty Emergency Planner		Command Center - Employee Info line/Government Liaison/Bunking Support	Day
Duty Emergency Planner		Command Center - Employee Info line/Government Liaison/Bunking Support	Night
Engineering Supervisor	Engineering Director	Bunking Lead	Day
Engineering Supervisor	Engineering Director	Food Service Lead (Night)	Night

Note: Positions in ***bold italics*** provide only day shift coverage.
"N/A" signifies a shift not assigned.

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER – CATEGORY 2+ HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION. NOTE: TO THE EXTENT POSSIBLE, KEEP MANAGEMENT OVERSIGHT PERSONNEL TO A MINIMUM.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT
TSC Nuclear Engineer	***Engineering Director***	***Food Service***	***Day***
TSC Mechanical Engineer	Engineering Director	Food Service	Day
TSC Mechanical Engineer	Engineering Director	Food Service	Night
TSC Electrical Engineer	Engineering Director	Food Service	Day
TSC Electrical Engineer	Engineering Director	Food Service	Night
Civil/Structures DE	***Engineering Director***	***Food Service***	***Day***
Medical Support (Doctor/Nurse)	Business Services Manager	Medical	Day
Medical Support (Doctor/Nurse)	Business Services Manager	Medical	Night (If available)
Fire Watch Personnel	Maintenance Support Supt.	Fire Watch	
Safety	Duty Plant Mgr	Bunking Lead	Night
Safety	Duty Plant Mgr	Bunking Lead	Day (If available)
Health Physics Coordinator/DAC	Emergency Planning Manager	Sanitation/Showers Lead	Day
Health Physics Coordinator/DAC	Emergency Planning Manager	Sanitation/Showers Lead	Night
Chemistry	Chemistry Superintendent	Food Service	N/A
Chemistry	Chemistry Superintendent	Food Service	Day
Chemistry	Chemistry Superintendent	Food Service	Night
Ionics Technician	***Chemistry Superintendent***	***Food Service***	***Day***

Note: Positions in ***bold italics*** provide only day shift coverage
"N/A" signifies a shift not assigned.

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER – CATEGORY 2+ HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION. NOTE: TO THE EXTENT POSSIBLE, KEEP MANAGEMENT OVERSIGHT PERSONNEL TO A MINIMUM.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT
Radwaste	RP Manager	Food Service	Day
Radwaste	RP Manager	Food Service	Night
HP (6)	RP Manager	Sanitation/Showers/Food Service/Bunking	Day
HP (5)	RP Manager	Sanitation/Showers/Food Service/Bunking	Night
OSC Supervisor	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds Lead	Day
OSC Supervisor	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds Lead	Night
PMI (2) (1 with security background)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PMI (2) (1 with security background)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Night
PME (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PME (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Night
PMM (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PMM (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Night
IT Representative – Computer Applications	***Nuclear IT Manager***	***Food Service***	***Day***
PMI Lead	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PMI Lead	Maintenance Manager	Food Service – Maintenance Leads provide one food service support per night shift	Night

Note: Positions in ***bold italics*** provide only day shift coverage
"N/A" signifies a shift not assigned.

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER – CATEGORY 2+ HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION. NOTE: TO THE EXTENT POSSIBLE, KEEP MANAGEMENT OVERSIGHT PERSONNEL TO A MINIMUM.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT
PME Lead	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PME Lead	Maintenance Manager	Food Service – Maintenance Leads provide one food service support per night shift	Night
PMM Lead	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
PMM Lead	Maintenance Manager	Food Service – Maintenance Leads provide one food service support per night shift	Night
Contractor Support (Carpenter) (4)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
Contractor Support (Laborers) (2)	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	N/A
IT Telecommunications	***Nuclear IT Manager***	***Food Service***	***Day***
Qualified Crane Operator – May be PMM resource and not separate position	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Day
Qualified Crane Operator– May be PMM resource and not separate position	Maintenance Manager	All Storage/Smoking Areas/Outside Grounds	Night
Rad. Assessment Coordinator/Field Team Controller	Emergency Planning Manager	Continuous Accountability Monitor/Command Center Support	Day
Rad. Assessment Coordinator/Field Team Controller	Emergency Planning Manager	Continuous Accountability Monitor/Command Center Support	Night

Note: Positions in ***bold italics*** provide only day shift coverage
"N/A" signifies a shift not assigned.

TABLE 9.2.2 (cont)

SUGGESTED HURRICANE DUTY ROSTER – CATEGORY 2+ HURRICANE

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR. THE MANAGEMENT CONTACT RESPONSIBLE FOR PROVIDING NAMES AND CONFIRMING ASSIGNMENTS WITH INDIVIDUALS WHEN THE ROSTER IS COMPILED IS IN THE "NAME" COLUMN FOR INFORMATION. NOTE: TO THE EXTENT POSSIBLE, KEEP MANAGEMENT OVERSIGHT PERSONNEL TO A MINIMUM.

PRIMARY RESPONSE DUTY	NAME	COLLATERAL DUTY	SHIFT ASSIGNMENT
OSC Security Superintendent	Security Superintendent	Outside Grounds	Day
OSC Security Superintendent	Security Superintendent	Outside Grounds	Night
Security (SSS)	Security Superintendent	Outside Grounds	Day
Security (SSS)	Security superintendent	Outside Grounds	Night
Warehouse Support	MP&C Manager	Food Service	Day
Warehouse Support	MP&C Manager	Food Service	Night
Operations Crew (Shift Manager)	Operations Manager	Plant Equipment/Plant Areas Cleanliness and Housekeeping	Day
Operations Crew (Shift Manager)	Operations Manager	Plant Equipment/Plant Areas Cleanliness and Housekeeping	Night

Note: Positions in ***bold italics*** provide only day shift coverage
"N/A" signifies a shift not assigned.

TABLE 9.2.3

SUGGESTED RECOVERY TEAM STAFFING

A small group "First In" Recovery Team may be relocated on parish evacuations with their families to core team family location (or a closer location outside the immediate area) in order to allow quick response back to the site to support plant repairs, forced outage and restart activities.

"FIRST IN" RECOVERY TEAM STAFFING

POSITION	TOTAL NUMBER OF PERSONNEL
SRO/RO	2
STA	1
NAO	4
Work Week Manager/Assistant Outage Manager	1
I&C/Electrical Planner	1
Mechanical Planner	1
Outage Scheduler	1
PME	4
PMI	4
PMM	2
Maintenance Support	2

TABLE 9.2.3

SUGGESTED RECOVERY TEAM STAFFING

NOTE: Numbers are approximate and depend on estimated extent of restoration effort.

POSITION	TOTAL NUMBER OF PERSONNEL
ONSITE RECOVERY SUPPORT	
Onsite Recovery Team Coordinator	1
Reactor Engineering	2
Mechanical Maintenance Supervisors	3
Mechanical Maintenance Planners	2
Mechanical Maintenance Scheduler	2
Mechanical Maintenance Personnel	10
I&C Maintenance Supervisors	3
I&C Maintenance Planner	2
I&C Maintenance Personnel	10
I&C Maintenance Scheduler	2
Electrical Maintenance Supervision	3
Electrical Maintenance Planner	2
Electrical Maintenance Personnel	10
Electrical Maintenance Scheduler	2
Scheduling	2
Telecom Support	2
System Engineering Supervisor	3
System Engineering - Mechanical	4
System Engineering - Electrical	4
System Engineering – BOP	4
Security Support	-
Component/Program Engineering	2
Purchasing/Procurement/Warehouse Supervisors	2
IT Support	2
Purchasing/Procurement Personnel	4
Siren Support	2
Materials Technical	2
Licensing Engineer	2
Warehouse Personnel	3
Contract Insulators	2
Construction Supervision	3
Quality Control Support	2
Construction Personnel	10
Operations	All considered as Recovery Team
Maintenance	All considered as Recovery Team

TABLE 9.2.3 (cont)

SUGGESTED RECOVERY TEAM STAFFING

POSITION	TOTAL NUMBER OF PERSONNEL
OFFSITE RECOVERY SUPPORT	
Offsite Recovery Team Coordinator	1
Emergency Planning Staff	5
Siren Maintenance Technicians	4
Licensing Engineer	1
Communicators	2
State/Parish Advisors	3
Siren Observers	6
Agreement Interviewers	2
Spokespersons	2
EMPLOYEE RECOVERY SUPPORT	
Employee Issues Coordinator	1
Assistants (MP&C personnel)	2
Human Resources Support Personnel	2
Home Repairs Team	4

TABLE 9.2.4

JACKSON RESPONSE TEAM DUTY ROSTER

ALL POSITIONS LISTED ARE CONSIDERED HURRICANE RESPONDER POSITIONS ON CALL AND CAN ONLY BE RELEASED BY THE EMERGENCY COORDINATOR OR EOF DIRECTOR.

POSITION	NAME	WORK	HOME	PAGER
Jackson Team Lead (Days)* Jackson Team Lead (Nights)*				
RO/SRO (Days)* RO/SRO (Nights)*				
Emergency Planner				
Family Support Coordinator				
Family Support Coordinator				
Site Communications Specialist				
Licensing Representative*				
Design Engineering Supervisor Design Mechanical Engineer Design Electrical Engineer Design Civil Engineer Telephone Talker/Monitor (Days)* Telephone Talker/Monitor (Nights)*				

Roster Notes:

1. Jackson Team personnel take all instructions regarding response, logistics and work effort only from the Jackson Team Lead (NAME). Team members will not respond to Jackson, or secure response once there, and return to the Waterford area, until directed by the Jackson Team Lead.

2. The Jackson Team Lead will be in direct contact with the Duty Plant Manager (NAME) to coordinate work efforts and logistics.

   Team member accommodations are provided at (HOTEL OR OTHER LOCATION NAME, STREET ADDRESS AND TELEPHONE NUMBER).

3. All Team members are to meet at (LOCATION) at (TIME) on (DATE).

   WATERFORD 3 HURRICANE COMMAND CENTER: (TELEPHONE NUMBER)

   HURRICANE CHARGE #: (CHARGE NUMBER)

4. *Must be Waterford-3 domiciled individual.

TABLE 9.2.4 (cont)

FAMILY SUPPORT COORDINATOR TEAM ACTIVITIES

1. Take pagers, cell phones, hurricane response duty rosters and Jackson Response Team duty rosters. Take other materials such as easels, markers, paper, pens, and laptop computer(s) as necessary.
2. Coordinate activities with the Corporate Emergency Planning Coordinator. The Corporate Emergency Planning Coordinator provides a local area knowledgeable liaison to employees domiciled at Jackson.
3. Family Support Coordinators should meet families as they arrive and provide them with initial briefing information.
4. Generate and maintain a list of Waterford 3 employee families with their hotel room numbers (or other location). Gather any other family contact information as necessary, including pager, cellular, etc.
5. Provide families with Jackson Response Team contact information, including room numbers, telephone numbers, pager numbers, etc. Provide the Employee Info Line number that will allow families access to the Corporate Emergency Center at Echelon.
6. Both Family Support Coordinators should stay on location where family members are lodged.
7. Be prepared to assist with emergency medical, dental, pet boarding needs, etc. Coordinate with the Jackson Emergency Planning Coordinator/CEC staff.
8. Provide periodic briefings for families. Pre-announce times and locations when possible. Provide packages with briefing information. Coordinate these activities with Entergy non-nuclear storm response personnel when lodged at same location as desired.
9. Establish and maintain a message board or easel at the lodging location. Notify families of its location. Post as much information as possible, including storm updates, plant updates, meeting times and places, messages from Waterford personnel, etc.

JACKSON RESPONSE TEAM ACTIVITIES

1. The Corporate Emergency Planning Coordinator should establish and supervise the telephone bank at Echelon when requested by Waterford 3 responders. This activity should be closely coordinated with the Jackson Response Team. Establish a process to get messages to and from the Family Support Coordinators (and message board).
2. Utilize Jackson Response Team members to coordinate first in response after storm passage.
3. All other Jackson Response Team members should obtain office space at Echelon. Assist with overall Waterford and Family Support Coordinator response as necessary.
4. Take pagers, cell phones, hurricane response duty rosters and Jackson Response Team duty rosters. Take other materials such as easels, markers, paper, pens, and laptop computer(s) as necessary.
5. Provide liaison between Waterford 3 and Echelon
6. Provide interpretation of Technical Specification and Operational procedures
7. Provide Operational Advice to Echelon
8. Hurricane tracking
9. FEMA disaster recovery support
10. E-Plan interpretation
11. Divide team assignments between nights and days. The Waterford 3 Emergency Planner and the Corporate Emergency Planning Coordinator should be assigned opposite shifts.

TABLE 9.2.5

COLLATERAL DUTIES

FUNCTION	LEAD POSITION NAMES	GENERAL DESCRIPTION
Bunking Coordination		• Assign bunking supplies • Assign bunking locations/maintain location list by individual • Post bunking area signs • Respond to requests for assistance or support • Ensure personnel are bunked in approved areas • Bunking area housekeeping and cleanliness
All Storage/Smoking Areas/Hurricane Equipment and Supplies/Outside Grounds Coordination		• Empty butt kits • Set up Turbine Building smoking area when all operations are moved in the plant • Assign hurricane response equipment and supplies - monitor inventories • Maintain housekeeping for outside areas • Make periodic hurricane readiness assessment tours with Civil Engineer (when staffed) as conditions allow and correct problems as necessary.
Food Service		• Set up and maintain meal service and cafeteria cleanup • Prepare for and move food service to +7 Chemistry Break Room when all operations moved inside plant.
Continuous Accountability Monitor		• Provide for continuous accountability of all core team personnel

TABLE 9.2.5 (cont)

COLLATERAL DUTIES

FUNCTION	LEAD POSITION NAMES	GENERAL DESCRIPTION
Message Boards/Internal Communications		• Maintain flow of information to personnel onsite using message boards • As necessary, get DPM/GMPO or EOF Director message approval • Consider posting: - Roster of everyone on site - Key telephone nos. - cellular telephone nos.; including Command Center, GMPO, DPMs, Bunking Coord., Meals, Security, Sanitation/Showers, etc. - Phones that can be used for long distance calls - Hotline updates - Updates to State, locals, NRC and Jackson - Weather Bulletins - Schedules - showers, meals, etc. - Hurricane Responders Handout - Management communications
Sanitation/Showers		• Maintain shower use schedule, post signs when reserved for female use, etc. • Maintain restroom/showers/port-o-let cleanliness/ housekeeping • Conduct periodic restroom/shower/port-o-let area tours • Provide supplies and support for restroom/shower/ port-o-let operations • Maintain oversight of all work (office) area housekeeping, garbage service, etc. except outside and Cafeteria areas
Command Center/TSC Operations		• Management direction and oversight of Command Center operations

TABLE 9.2.6
HURRICANE RESPONDER SITE BRIEFINGS

OUTLINE

I. Storm Status

- Can use projection capabilities in conference/assembly rooms and hurricane tracking program

II. Status of Plant Preparations

- Items remaining to be done
- Support needed from responders

III. Family Arrangements/Personal Preparations

- Block of rooms provided as a safety net
- Address what employees are responsible for and what company will cover
- Remind evacuees to take cash and credit cards
- Communicate special needs to Emergency Planning
- Hotel contact(s) from Waterford 3:

  Hotel _____

  Name(s) _____

  Room Number(s) _____

  Pager Number(s) _____

  Cell Phone Number (s) _____

- Families maintain contact through Employee Info line

TABLE 9.2.6 (cont)
HURRICANE RESPONDER SITE BRIEFINGS
OUTLINE

NOTE
All hurricane responders are required to report for work as scheduled unless directed otherwise by Waterford 3 emergency response management.

1. Notification from a Supervisor that an individual does not have to report for normal work is not sufficient to release that individual from his emergency response duties and he is expected to report to work.
2. Only the Duty Plant Manager may release plant response personnel or the Duty EOF Director for EOF responders.

IV. Confirm Employee Availability/Understanding of Assignment

V. Review Methods of Callout and When Callout May Take Place

- VNS - limited to duty personnel - others notified via other means
- Employee Info line - call at watch, warning and as instructed
- Individual telephone callout
- When (things considered)
  - employee safety
  - Contraflow
  - bridge closures (at 50 mph winds)
  - potential for road closures due to high water
  - parish voluntary/mandatory evacuations
  - all personnel in place well in advance (12 - 24 hours) of projected landfall
  - extent of hurricane force winds

VI. Items to Bring and Items Provided

- Sufficient supplies of prescription medication for 5 days.
- Air mattresses will be provided.
- Food & water will be provided.
- Individual responders are to bring leisure/recreation supplies, book, cards, etc.
- Individual responders are to bring hygiene supplies, towels, soap, shaving kit, etc.

ATTACHMENT 9.2 **W3 SPECIFIC SEVERE WEATHER CHECKLIST**

Sheet 25 of 49

VII. Duty Roster - Collateral Duties

VIII. Review Important Information on Hurricane Responders Handout

- Meal/shower schedules
- Expectations, etc.

IX. Management Expectations

- Housekeeping
- Teamwork
- Sleep when off duty
- Collateral Duties
- Accountability

TABLE 9.2.7

Hurricane Responders Handout

- Labeling of Personal Gear

- Label all bags, cases, lockers and other items used to store personal gear with your name.
- Label your air mattress.
- Masking tape and markers for labeling gear are provided in the EPlan storage trailer and in the Hurricane Command Center.
- Keep all your gear and bunking equipment in the same location and ensure personal items are properly stowed when not in use.
- Contact the Bunking Coordinator _____(name)_____ with questions or problems.

- Bunking

- Pick up bunking equipment and supplies at the EPlan storage trailer.
- Personnel may bunk in areas in the Protected Area (MSB, Maintenance Shop, etc.) and Administration Building until directed to move into the Nuclear Island.
- Personnel are required to bunk in the designated area for their work group in the Nuclear Island when directed.
- Personnel are requested to maintain sleeping arrangements so that females remain with other females in designated areas and that night and day shift personnel attempt to bunk in common locations.
- Notify the Bunking Coordinator (Civil/Structure DE) of your specific bunking location for accountability purposes. If you relocate, notify the Bunking Coordinator of your new location.
- Contact the Bunking Coordinator (Civil/Structure DE) with questions or problems.

- Meals (Note: Please identify yourself to the Food Service Lead if you have a background as a restaurant owner, military cook, scout troop leader, etc.)

- Meals served in MSB Cafeteria until 30 mph sustained winds, then meals will be served at the -4 Chemistry Breakroom area.

  Breakfast: 0630 - 0800
  Lunch: 1100 - 1300
  Dinner: 1700 - 1900
  Midnight: 0000 - 0100

- Meals will be self-serve cold cuts when cafeteria operations are relocated to the -4 Chemistry Breakroom area.

Table 9.2.7 (cont)

Hurricane Responders Handout

- Personal Safety/Accountability
  - All personnel are required to remain in the Protected Area or Administration Building, until notified to move into the Nuclear Island.
  - Command Center notification and approval by EOF Director or DPM required to go to any other site locations or to go offsite. Personnel will be tracked until return.
  - Sick Call schedule - Nurse will see personnel with non-emergency conditions at the following times:
    Location/Time (MSB 2nd floor before Nuclear island relocation): FROM_____ TO_____
    Location/Time (RAB location TBD after Nuclear Island relocation): FROM_____ TO_____
- Shift Assignments and Shift Changes
  - Shift rotation is not mandatory (except for designated Command Center personnel) until the TSC is operational.
  - TSC operational and emergency response activities transferred to TSC from Control room at 50-mph winds.
  - Operating Crews

    Days - _____ SHIFT MANAGER

    Nights - _____ SHIFT MANAGER

    Including shift HPs, Security, Chemists and Maintenance

    Day Shift Meeting: 0830
    Night Shift Meeting: 1930
  - Security Crews

    Days - _____ SSS

    Nights - _____ SSS
  - Emergency Plan Organization

    Days - _____ DPM/EC

    Nights - _____ DPM/EC

    Days - _____ EOF Director

    Nights - _____ EOF Director

TABLE 9.2.7 (cont)
Hurricane Responders Handout

- Messaging Information

- Plant page use will be minimized. Note: Plant page can be used from 0500-0700 & 1700-1900 to communicate updated information,

- Plant management communications and directives as well as other information for employees will be posted in the following areas: MSB Message Board (until closed), PAP (until closed), and RAB elevator lobbies.

- Family messages will be posted on the MSB Message Board. Family messages will be posted at the -4 Elevator Lobby when the MSB is closed.

- General Response Information
- Unusual Event: Site predicted to experience a hurricane with hurricane force (≥ 74 mph) winds onsite in ≤ 12 hours as predicted by the National Weather Service.
- Alert: Tornado or high winds > 100 mph within the Protected Area boundary resulting in visible damage to plant structures/equipment or Control Room indication of degraded performance of those systems in Containment, Reactor Auxiliary Building, Turbine Building or Cooling Tower Areas.
- When relocation to the Power Block is directed by Management (at ~30 mph sustained winds and conditions are expected to worsen significantly):

  - All operations relocate to the power block (inside the RAB).
  - Security closes all storm doors.
  - PAP is closed.
  - Outside fire watches curtailed.

- At 50 mph sustained winds:

  - Emergency organization activated.
  - All shift rotation assignments become mandatory.
  - OSC personnel assemble at +7 RAB.

- Collateral Duties
- All personnel are assigned to assist with response activities in addition to their normal duties. See the roster. Meet with your lead for specific assignments.

- Compensation
- In accordance with W1.103, non-exempt personnel are compensated for rest time on site after initial normal scheduled work hours as paid non-productive time (1.5 times hourly rate) and are compensated for productive time at 2 times the hourly rate until the emergency declaration is rescinded.
- Management determines compensation for exempt employees specific to each hurricane event.

TABLE 9.2.7 (cont)

Hurricane Responders Handout

- Housekeeping

- All personnel are responsible for housekeeping and cleanliness. If you see litter, pick it up. Clean up after yourselves in cafeteria, bunking and shower areas.

- TSC Command Center responders, GMPO and DPMs are responsible for housekeeping, garbage collection, cleaning in the TSC Envelope. Others have lead housekeeping functions through collateral duty assignments.

NOTE

All hurricane responders are required to report for work as scheduled unless directed otherwise by Waterford 3 emergency response management.

1. Notification from a Supervisor that an individual does not have to report to work is not sufficient to release that individual from his emergency response duties and he is expected to report to work.

2. Only the Duty Plant Manager may release plant response personnel or the Duty EOF Director for EOF responders.

TABLE 9.2.7 (cont)

Hurricane Responders Handout

- Important Telephone Numbers

NOTE

Do not call the Control Room for status or with questions. Call the Command Center.

- Command Center _____ MSB
  _____ TSC
- GMPO - _____
- DPM - _____
- EOF Director - _____
- Bunking Coordinator - _____
- Storage/Outside Areas Coordinator - _____
- Showers/Sanitation Coordinator - _____
- Security Superintendent - _____
- IT Telecommunications - _____
- IT Computer Applications - _____

- Entergy's Employee Info line – 1-877-812-4615 (Option 1)

TABLE 9.2.8
EMPLOYEE INFO LINE MESSAGE - STANDARD EARLY MESSAGE

LEAD:	"This is the Waterford 3 Employee Info line.
	This message is for (Time) on (Day of Week and Date)."
INSTRUCTIONS (IF ANY) OR	
INFORMATION FOR	
HURRICANE RESPONDERS/	
JACKSON TEAM:	
INSTRUCTIONS (IF ANY) OR	
INFORMATION FOR ALL	
EMPLOYEES:	
CALL BACK TIME	"Call this info line again at (Time) on (Day of Week and Date) unless conditions
	change significantly. The Employee Info line number is 1-877-812-4615
STATUS OF NORMAL WORK	
SCHEDULES (REQUIRED FOR	
MESSAGE):	
STATUS OF NORMAL AND	
EMERGENCY DUTY ROSTERS	
(REQUIRED FOR MESSAGE):	
LATEST EVENT SUMMARY	
:	
CLOSING	"End of Message."

TABLE 9.2.8 (cont)
EMPLOYEE INFO LINE MESSAGE - STAFFING/PARISH EVACUATIONS

LEAD:	"This is the Waterford 3 Employee Info line.
	This message is for (Time) on (Day of Week and Date)."
STATUS OF NORMAL WORK	"All normal work schedules are cancelled until further notice due to
SCHEDULES (REQUIRED FOR	(State reason: parish evacuation orders, etc.)."
MESSAGE):	
INSTRUCTIONS (IF ANY) OR	"On-shift personnel designated as hurricane responders reporting for
INFORMATION FOR	the night shift on (Day of Week and Date) should be prepared to stay
HURRICANE RESPONDERS/	at the plant for the duration of the storm. Day shift personnel
JACKSON TEAM:	reporting for (Day of Week and Date) designated as hurricane
	responders should be prepared to stay at the plant for the duration of
	the storm. Designated site Hurricane Responders report to the
	Maintenance Support Building Cafeteria at (Time) on (Day of Week
	and Date) and be prepared to remain onsite.
	If this direction changes, you will be notified by VNS, this hotline
	or some other means. The Jackson Team will be notified by the
	Team Leader for rendezvous information but is required to respond
	on (Day of Week and Date). All Emergency Plan responders who
	are not hurricane responders are now released."
INSTRUCTIONS (IF ANY) OR	"All Waterford 3 personnel are expected to maintain contact with the
INFORMATION FOR ALL	plant through the emergency Employee info line for more information
EMPLOYEES:	on hurricane response and work schedules."
CALL BACK TIME	"This message will be updated at (Time) on (Day of Week and Date).
	The Employee Info line number is 1-877-812-4615
STATUS OF NORMAL AND	"All normal and emergency duty rosters are secured until further
EMERGENCY DUTY ROSTERS	notice."
(REQUIRED FOR MESSAGE):	
LATEST EVENT SUMMARY	
CLOSING	"End of Message."

TABLE 9.2.8 (cont)
EMPLOYEE INFO LINE MESSAGE – STANDARD IMPLEMENTATION UPDATE MESSAGE

LEAD:	"This is the Waterford 3 Employee Info Line. This
	message is for (Time) on (Day of Week and Date)."
CALL BACK TIME:	"This message will be updated at (Time) on (Day of Week and Date).
	The Employee Info line number is 1-877-812-4615
STATUS OF NORMAL WORK	"All normal work schedules are cancelled until further notice due to
SCHEDULES (REQUIRED FOR	(State reason: parish evacuation orders, etc.)."
MESSAGE):	
STATUS OF NORMAL AND	"All normal and emergency duty rosters are secured until further notice."
EMERGENCY DUTY ROSTERS	
(REQUIRED FOR MESSAGE):	
DAMAGE REPORT	
AND STATUS	
OF PERSONNEL	
ACCOUNTABILITY:	
UPDATE OF PARISH	
AND STATE ACTIONS	
LATEST EVENT SUMMARY:	
CLOSING:	"End of Message."

TABLE 9.2.8 (cont)
EMPLOYEE INFO LINE MESSAGE – ALL CLEAR/RECOVERY

LEAD:	"This is the Waterford 3 Employee Info Line. This message is for (Time) on (Day of Week and Date)."
INSTRUCTIONS OR INFORMATION FOR ALL PERSONNEL/RECOVERY CREWS (REQUIRED FOR MESSAGE):	
CALL BACK TIME:	"This message will be updated at (Time) on (Day of Week and Date). The Employee Info Line number is 1-877-812-4615
STATUS OF NORMAL WORK SCHEDULES (REQUIRED FOR MESSAGE):	State when return to work is expected or give alternative appropriate message.
STATUS OF NORMAL AND EMERGENCY DUTY ROSTERS (REQUIRED FOR MESSAGE):	State when these rosters will be reestablished or state they remain secured until further notice. Consider hurricane rosters will have to remain in effect until time is allowed for evacuees to return to the area.
STATUS OF ROADS, EVACUATIONS AND CURFEWS OR REFERENCE TO STATE POLICE NUMBER(S) 1-800-469-4828	
LATEST EVENT SUMMARY:	
CLOSING:	"End of Message."

TABLE 9.2.9

Plan for Relocation to the Nuclear Island

At 30 mph sustained winds and environmental conditions expected to worsen significantly, all operations will be moved to the power block as follows:

1. Implement 10CFR50.54(x) and (y) as necessary.
2. Relocate all personnel to the RAB. Bunking Coordinator ensures personnel have relocated (including those sleeping); new bunking areas assigned and performs a final accountability check. Assign bunking in accordance with Attachment 7.5 and provide a barrier to ensure that the protected divisions are respected during bunking activities.
3. Perform final outside area walkdown with Maintenance and Civil Engineering personnel (if staffed).
4. Security closes down and secures the PAP and closes all flood doors. Secure fire watches in bunking areas if not already performed.
5. Secure all outside fire watches and Security posts.
6. Relocate work areas as follows: Command Center – TSC Emergency Control Center, OSC/Maintenance/Security - +7 RAB offices, Health Physics - 4 Control Point.
7. Move MREs/Heater Meals from warehouse to TGB +15.
8. Implement tagouts to secure lighting and ventilation in sleeping areas if not already performed.
9. Relocate food service to the –4 RAB Chemistry Break Room, planning to provide self-serve cold cuts.
10. Notify the NRC, Jackson Response Team, Parishes and State of lock down condition. Provide them with new contact number as appropriate. Update Employee Info Line messages.
11. Shut down bottled drink machines in RAB to reduce power load.
12. Stop use of RAB elevators to reduce power loads.

TABLE 9.2.9

Plan for Relocation to the Nuclear Island

At 50 mph sustained winds, take the TSC to operational status, transfer emergency response actions from the Control Room to the TSC and implement 24-hour coverage for all applicable positions if not already performed.

1. Notify the NRC, Jackson Response Team, Parishes and State when the TSC is activated. Update Employee Info Line messages.

Following passage of the storm when environmental conditions are declared safe by the DPM:

1. Perform initial outside area walkdown with Maintenance and Civil Engineering personnel (if staffed).
2. All personnel will be allowed to return to bunking outside the power block. Bunking Coordinator should ensure personnel not bunking in the power block have removed bunking supplies from the power block and maintain area cleanliness.
3. Reinstate fire watches as required
4. Relocate food service to the MSB Cafeteria.
5. Notify the NRC, Jackson Response Team, Parishes and State of current conditions. Provide them with new contact number as appropriate. Update Employee Info Line messages.

TABLE 9.2.9 (cont)

EXAMPLE WRITTEN PLANT UPDATE MESSAGE (Plan for Relocation to the Nuclear Island)

WATERFORD 3 UPDATE – 8/28/05 - 0800

It appears that hurricane force winds are expected by the parish around 0400 tomorrow morning. Therefore, a plant cooldown will begin this afternoon. Plant management will continue to watch the weather. Our goal is to be in Mode 3 before hurricane force winds occur onsite.

LOGISTICS

Operating Crews
Days – Douglas Ortego & Shift C
Nights – David Jory & Shift A
Includes shift HPs, Security, Chemists and Maintenance
Day Shift Meeting: 0830
Night Shift Meeting: 1930

Security Crews
Security Shift Supervisor – Days: Glenn Comeaux
Nights: Mike Stubbs

Emergency Plan Organization
- Days Dennis Matheny (EC) & Personnel with duty week of August 22-28
- Nights Chester Fugate (EC) & Personnel with duty week of August 29-Sept. 4
- Day shift/night shift rotation is not mandatory until the TSC is operational, but Shift Manager will contact the appropriate E-Plan EC or staff as necessary.
- TSC will be operational at 50-mph wind onsite. Only the appropriate shift (day shift/night shift) will respond. OSC personnel will assemble at the +7 elev.
- An Unusual Event will be declared when the site is predicted to experience a hurricane with hurricane force (≥ 74 mph) winds onsite in ≤ 12 hours as predicted by the National Weather Service.
- An Alert will be declared with a tornado or high winds > 100 mph within the Protected Area boundary resulting in visible damage to plant structures/equipment or Control Room indication of degraded performance of those systems in Containment, Reactor Auxiliary Building, Turbine Building or Cooling Tower Areas.
- Shift changes will occur at 0600 and 1800.

All Personnel:
When relocation to the Power Block is directed by Management (at ~30 mph sustained winds and environmental conditions are expected to worsen significantly):
- All personnel will move to the power block (inside the RAB)
- Security will secure all storm doors
- The PAP will be closed
- Outside fire watches will be curtailed
- Prior to TSC operational status, persons needing to go outside must get approval from their supervisor. Access will be through the Turbine Building since the outside storm doors will be secured. (Call CAS at 3562 for temporary access should you need to go through those doors.)
- After the TSC is operational, accountability will be via the normal E-plan card readers and procedure.

At sustained 50 mph winds:
- The TSC and emergency organization will be activated and the TSC will go operational.

TABLE 9.2.9 (cont)
EXAMPLE WRITTEN PLANT UPDATE MESSAGE (Plan for Relocation to the Nuclear Island)

GENERAL NOTES

Designated sleeping areas are:

+46 HVAC (AH-25) Area – Reserved for female bunking	+35 Elec. Pen. Area "Zone 2" – TSC Command Center, Bunking Personnel, Message Board Personnel, etc.
+46 Computer Room – Operations	+35 Hallway – Maintenance, Cafeteria Support, etc.
+46 NRC Room – NRC	+7 Chemistry, Cubicles and Open Areas – HP, Chemistry, Radwaste, Security
+46 Dose Assess. Room – GMPO/DPMs	-4 HP and Radwaste (non-CAA) area – Security
+35 Relay Room (Door 218) – TSC Command Center	+35 Relay Room (Doors 209 A & B) – Reserved for female bunking

Designated smoking area will be in the Turbine Building on the +46 just outside the Control Room airlock doors (Door 262). Do not wander away from this designated smoking area. Temporary access for this door has been arranged.

Please be considerate of those that are sleeping.

Restrict paging to only what is critically necessary. Message boards in the RAB elevator lobbies will be used to communicate status and messages. Plant paging is allowed from 0500-0700 and 1700-1900.

Pick up and wash up after yourselves. Don't leave a sink or any other facility such that you wouldn't want to use it.

Do not use elevator because electrical power supply is limited.

Collateral duties for all responders have been assigned to help with meals, cleanup, etc. These duties are posted in the elevator lobbies. Please be courteous and volunteer when possible.

After all personnel have been relocated to the power block (RAB), meals will be self-serve cold cuts, etc. at the –4 Chemistry Break Room area at the following times:

Breakfast:	0630-0800
Lunch:	1100-1300
Dinner:	1700-1900
Midnight:	0000-0100

Duty Plant Manager

GMPO

TABLE 9.2.10
HURRICANE MESSAGE FORM

MESSAGE NUMBER _____

To: (circle one or more)

NRC Resident NRC HQ NRC Region IV RBS Jackson Team Echelon

St. Charles Parish St. John Parish GOHSEP LDEQ NWS

Other: _____

From: _____ Date: _____ Time: _____

Callback Telephone Number: _____

1. Storm Status Report: _____

2. Plant Status Update (Outside Conditions, EOOS, Damage Report, Accountability, etc.): _____

3. Meteorological Data:

   Wind Speed: _____ mph Wind Direction (from): _____

   Precipitation: _____

4. Waterford 3 Requests for Information or Assistance from Others: _____

5. Information or Assistance Requested of Waterford 3: _____

6. Approval: _____

TABLE 9.2.10 (cont)

USE OF HURRICANE MESSAGE FORM

1. Message form provides a convenient method to document calls, but is optional as long as information is documented by some other means (log entry, EPIP Notification Message Form, etc.).

2. A simple method of numbering should be used that allows each originator or receiver to track their own messages, such as MLH-1, MLH-2, MLH-3, RJP-1, JJL-1, etc.

3. The message form can be used in full or partially to document messages. Example: Lines 1, 2, 3 and 4 are not completed for message RJP-10, but Line 5 is used to document a request for lodging assistance from the NRC.

4. Approvals are not required unless directed by the DPM or EOF Director. If an approval is not used, then the line should have "N/A". If approvals are directed to be used, then the EOF Director or DPM signs the line and prints name and title near the signature.

TABLE 9.2.11

EMPLOYEE HURRICANE INFORMATION

- The number to call for additional information on work schedules and site activity updates as a hurricane approaches is Employee Info Line 1-877-812-4615. This line is intended to be used after-hours or on weekends when information is not readily available from regular sources.
- Hurricane responders will be contacted and provided specific information on their required response by the VNS or other callout means.
- The number to call for information if local communications are lost or to request assistance is Entergy Info Line 1-877-812-4615. Entergy Operations, Inc. will provide assistance in locating accommodations for families that are evacuating. Option 6 under nuclear options will connect the call to a hurricane response operator at a telephone bank at Echelon (when activated).
- Released employees are responsible to provide their supervisor with contact and evacuation information prior to leaving the area.
- Released personnel are expected to report back to the plant as soon as possible following storm passage.
- Provide employees with storm information website.
- Employees requiring lodging should contact Family Coordinators
- Employees must cancel rooms that are no longer needed by contacting Family Coordinator
- Employee families eligible rooms must contact the Family Coordinators at time of check in to obtain room assignment and key
- An Instruction sheet will be provided to employee family members at time of arrival:
    - guest will complete information sheet prior to getting room key
    - expectations for family member to pay incidentals (credit card or cash)will be discussed
    - check out process (notify Family Coordinators prior to checking out)
    - follow up call to Family Coordinators upon arrival back home
    - Employees should make follow-up phone call to cancel if family member changes their mind – *accountability/availability of rooms*
    - Families to notify Family Coordinators when checking out

TABLE 9.2.12

REACTOR AUXILIARY BUILDING HURRICANE BUNKING PLAN

NOTES

1. NO BUNKING IS ALLOWED ON THE RAB +21 ELEVATION.
2. Hourly fire watches are required for bunking areas. The numbers provided below are suggested bunking spaces only and do not represent an acceptable amount of material for fire loading purposes. In addition no hot work activities shall be allowed. Bunking must be arranged in the +35 hallway area such that access through the hall and Doors D174, D176, D218, D219 and D228 are not impacted.
3. A pre-written fire impairment is provided on the shared drive for hurricane bunking areas.

	LOCATION	GROUP	ESTIMATED NUMBER OF BUNKING SPACES
1.	+46 Computer Room	Operations	32
2.	+46 HVAC Area	Reserved for Female Bunking	16
3.	+46 NRC Room	NRC	3
4.	+46 TSC Dose Assessment Room	GMPO/DPMs	3
5.	+35 Hallway	Maintenance, Cafeteria Support, etc.	30
6.	+35 Electrical Penetration Area "Zone 2" (Door 174)	TSC Command Center Staffing, Bunking, Message Board Personnel, etc.	24
7.	+35 Relay Room (Door 218)	TSC Command Center Staffing	4
8	+35 Relay Room (Doors 209A & 209B)	Reserved for Female bunking	10
9.	+7 Chemistry, Cubicles and Open Areas	HP, Chemistry, Radwaste, Security	34
10.	-4 HP and RAD Waste Areas	Security	7
		TOTAL:	163

TABLE 9.2.13
Waterford 3 Typical Pre-Hurricane Season Preparation Checklist

1. Test portable satellite hand-held telephones (6 total)
2. Test fixed satellite base unit (1)
3. Confirm capability to access IEStormNet web site and nuclear section of web site
4. Participate in Entergy System evacuation tabletop drill
5. Review Entergy Nuclear South corporate hurricane procedure for changes for calendar year.
6. Test satellite portable "suitcase" units (2)
7. Test 501 area code dual dialing capability in emergency response facilities/designated locations
8. Walkdown MSB OSC/OCC command room for use as hurricane command center to check internet access capability and television connections
9. Conduct annual training on the use of the satellite communications system, hurricane VNS scenario, Employee Info Line messaging, webeoc, set up of hurricane command center, hurricane tracking software, corporate severe weather procedure and other actions and expectations in a hurricane threat situation for duty emergency planners
10. Participate in Entergy Employee Info Line user's pre-hurricane season conference call
11. Exchange hurricane response procedures with NRC Region IV
12. Conduct annual pre-season plant and grounds walkdown by Maintenance Construction and Civil Engineer
13. Participate in Entergy Nuclear South joint hurricane tabletop
14. Perform semi-annual vendor PM of EOF diesel
15. Confirm MRE/Heater Meal shelf life in accordance with manufacturer guidelines, perform taste test and restock MREs/Heater Meals as necessary
16. Check the three copies of drawings for off site power supply at the EOF, OSC and Echelon. Update drawings to current copy if needed

TABLE 9.2.13 (cont)
Waterford 3 Typical Pre-Hurricane Season Preparation Checklist (Cont.)

17. Walkdown of dedicated hurricane storage areas and supplies
18. Test voice over internet protocol telephones in Emergency Facilities
19. Perform PM of EOF Communications Room air conditioner and verify unit will power up from EOF diesel
20. Conduct hurricane all hands meetings
21. Inventory small generators on site (PME is contact), noting number and locations
22. Review model food order and ensure supply is for 5 days (3 day lock-down minimum)
23. Audit and test site non-local area code cell phones
24. Audit and test state/local non-local area code cell phones
25. Purchase and receive hurricane tracking software updates/web service access
26. Load and test hurricane tracking software in all Emergency Planner computers, hurricane command center computer and podium computers
27. Confirm validity of existing temporary emergency diesel generator and auxiliary boiler contracts/agreements
28. Review auxiliary boiler specification and ensure it is accessible by site storm preparation team/hurricane responders
29. Review and update as necessary Emergency Planning web site Memphis primary hotel information
30. Provide Memphis secondary hotel information (names and telephone numbers) for posting on Emergency Planning web page
31. Review and update Jackson hotel and kennel information
32. Confirm/renew Memphis, TN hotel contract
33. Test (or otherwise confirm) functionality (and restore as necessary) of tie between Employee Info Line and Echelon One CEC 1-800 hurricane hotline number. Ensure telephone bank in CEC is in hunt group and that calls will roll to the open line

TABLE 9.2.13 (cont)
Waterford 3 Typical Pre-Hurricane Season Preparation Checklist (Cont.)

34. Schedule and conduct a pre-hurricane season conference call with NRC Region IV/ share hurricane response procedures with NRC. This action may be performed by Corporate Headquarters.
35. Verify EOF diesel fuel tank at 400 gallons or more and top off as necessary
36. Check information on Hurricane Family Coordinator electronic file for accuracy and update as necessary
37. Confirm cafeteria staff contact information and availability to support hurricane preparations as long as possible in an event
38. Communicate to Shift Managers the temporary emergency diesel generator contractor protocol for noticing the Waterford 3 Control Room for decision on equipment order
39. Complete actions identified during site walkdown to secure site for the season
40. Update Emergency Planning web page with current hotel and kennel information.
41. Revise ENS-EP-302 prior to hurricane season, if necessary
42. Perform QA review of Waterford 3 hurricane preparedness activities
43. Conduct joint scenario driven hurricane tabletop with the St. Charles Parish Emergency Preparedness Director, St. John the Baptist Parish Civil Defense Director and Waterford management
44. Confirm with local news authorities the capability to get information to employees through the media post-storm
45. Provide instructions on how to set up and run satellite internet and test it out
46. Check for water in EOF diesel fuel tank and remove as necessary – confirm this is done on PMs
47. Check tank levels for gasoline and diesel site fuel storage tanks – confirm (post-storm) supplies
48. Brief new managers/supervisors on hurricane preparedness key items
49. Confirm webeoc operations for family support coordinators and review the program with them

TABLE 9.2.14

Waterford 3 Typical Food Service Plan

1. Food location	
2. Types of food available (ex: frozen, dry, canned, MRE, heater Meal)	
3. Plan to use the food (ex: prior to entering RAB; 1st day in RAB, 2nd day in RAB; 1st day recovery)	
4. Length of time food supply expected to last in RAB lock-down condition	
5. Re-supply plan	
6. re-supply contact	
7. Persons with access/keys to food storage locations	
8. How much food preparation is needed for each type of food?	
9. Personnel resources assigned to cooking, serving and cleanup	
10. Plans for power restoration to refrigerators, stoves, freezers, ice machines	
11. Plans to Establish a food service area other than the RAB +7 hallway for lock-down conditions	

TABLE 9.2.15
Waterford-3 Typical Transition Plan from Site Provided Food to Caterer

1. Caterer contact information	
2. Estimated Caterer arrival time	
3. Location of caterer set-up area	
4. Caterer Support needed from site (power, water, food supplies, etc)	
5. Person supervising the on-site activities of caterer	
6. Transition plan back to GSB cafeteria operations	

TABLE 9.2.16
Access Credentials (Typical)

Entergy®

Authorized Emergency Response Team

Waterford-3

TABLE 9.2.16
Access Credentials (Typical)

Reference: Letter of Access

To Whom It May Concern:

This document is written in conjunction with emergency plans for critical infrastructure restoration for the State of Louisiana, to allow Entergy employees access to areas where routes have been deemed passable but not open to the general public. This Letter of Access authorizes the bearer to enter restricted areas for the purpose of assessing damage and restoring the electric utility infrastructure.

Entergy Operations Inc. / Waterford-3 certify that _____ is authorized to assist in emergency restoration/emergency response activities related to nuclear plant safety. Please allow appropriate access as required to restore electric utility services and facilities.

For verification of individuals providing assistance to Entergy for this emergency please call Waterford-3 at either:

504-739-6104
Or
504-464-3423

Additionally, please feel free to contact me as follows:

Entergy/ Waterford-3
Emergency Planning Department
504-739-6624

Very truly yours,

Emergency Planning Manager

ATTACHMENT 9.3 RBS SPECIFIC SEVERE WEATHER CHECKLIST

Sheet 1 of 10

NOTE

The implementation of this procedure is the discretion of the Site General Manager, Duty Manager, Shift Manager or designee. He/she may implement this procedure in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, time before storm arrival, existing outside conditions, plant status, site accessibility, availability of inside storage space, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated. This form or a similar form may be used.

ITEM	COMPLETED BY TIME/DATE/INITIALS
SECTION 1 Entry Conditions: Hurricane/Tropical Storm Located in the Gulf Of Mexico	
GM-PO or designee	
1. Obtain and maintain an official signature copy of this checklist.	____/ ____/ ____
2. Ensure Emergency Preparedness is tracking the Hurricane/Tropical Storm.	____/ ____/ ____
3. Ensure site personnel are made aware of the tropical storm within a reasonable time.	____/ ____/ ____
4. Ensure appropriate steps of Attachment 9.1 Generic Hurricane Response Checklist are completed as needed.	____/ ____/ ____
5. Considering the location and intensity of the storm, review Section 2 of this procedure for any steps which should be initiated proactively before Section 2 entry conditions are met.	____/ ____/ ____
SECTION 2 Entry Conditions: Hurricane Watch issued for the Louisiana Coast line.	
GM-PO or designee	
6. OSM is aware of Hurricane watch and is implementing AOP- 029, severe Weather Operations.	____/ ____/ ____
7. Inform the responsible Directors/Managers to perform applicable steps of generic checklist Attachment 9.1 and site specific steps of checklist attachment 9.3.	____/ ____/ ____
8. Notify warehouse personnel to verify/obtain approximate quantities of : 65 MRE Cases (12 MREs per case) 100 Air Mattresses 200 Blankets 300 Gallons of Water 8 Air mattress inflators	____/ ____/ ____
9. If the outage RV park is in use, evaluate continued use of the outage RV park in the event the hurricane continues to approach the station.	____/ ____/ ____

ATTACHMENT 9.3 RBS SPECIFIC SEVERE WEATHER CHECKLIST

Sheet 2 of 10

Manager, Radiation Protection or designee

10. Designate RP personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

Superintendent, Chemistry or designee:

11. Designate Chemistry personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

Manager, Maintenance or designee:

12. Designate Maintenance personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

13. Verify availability and adequate fuel for the Main Admin and Training Center areas. ____/ ____/ ____
14. Review status of emergency communications equipment (sirens, radios, etc), bucket truck, spare equipment and EOF battery banks with I&C Communications Technicians. Expedite completing any critical work. ____/ ____/ ____
15. Secure trailers:

    Inside Protected Area

    - Tie down or remove the trailer/structure. Anchor to existing concrete slabs with concrete expansion anchors. Tie-down to soil with trailer anchors. ____/ ____/ ____
    - If the trailer/structure cannot be anchored or removed (as during outage), restrain with precast concrete blocks or evaluate its location relative to high winds. If it is determined to be in a "sheltered location" no further action is required.
    - Groups of trailers or buildings may be tied together in lieu of anchoring.
    - "Sealand" type containers do not need to be tied down.

    Outside the Protected Area

    - Trailers and temporary structures outside protected area should be tied down at the discretion of the Manager of maintenance or his designee.
    - Consideration should be given as to the distance from the trailer/structure to cooling towers, electrical equipment, overhead lines, etc, and the vulnerability of these permanent plant structures to damage.

Manager, Security or designee:

16. Designate Security personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

ATTACHMENT 9.3 **RBS SPECIFIC SEVERE WEATHER CHECKLIST**

Sheet 3 of 10

Manager, Operations or designee:

17. Designate Operations personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

Director, NSA or designee:

18. Designate Licensing personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

Manager, Planning/Scheduling and Outages or designee:

19. Designate Planning/Scheduling personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

Director, Engineering or designee:

20. Designate Engineering personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____

Emergency Preparedness

21. Update the Entergy Info Line 1-877-812-4615. (See Table 9.5.7 page 11 of 12 for update instructions) ____/ ____/ ____
22. Select a location to serve as a Storm Monitoring Center ____/ ____/ ____
23. Monitor current storm translational speed, radius, and distance from RBS to estimate time of impact to the station. Provide periodic informational updates to the GM-PO. ____/ ____/ ____
24. Designate the ERO Facility Minimum Staffing for 2 shifts of Hurricane Responders. Unless directed otherwise, dayshift hurricane responders will be pulled from the current ERO duty rotation, and the nightshift hurricane responders from the previously scheduled ERO team. ____/ ____/ ____
25. Track the Hurricane/Tropical Storm and provide information and recommendations to the GM-PO or designee. ____/ ____/ ____
26. Verify satellite phones operable. Stage satellite phones in Main Control Room and EOF on charge. Test Emergency Plan communications systems. Expedite any necessary repairs. ____/ ____/ ____
27. Designate Emergency Planning personnel to remain on-site should the hurricane head toward RBS and designate the individuals in Table 9.3.1. Complete applicable steps of Attachment 9.1. ____/ ____/ ____
28. Establish and maintain an event log for the duration of the hurricane. Use WEBEOC or other computer program used by the fleet. ____/ ____/ ____

ATTACHMENT 9.3 RBS SPECIFIC SEVERE WEATHER CHECKLIST

Sheet 4 of 10

GM-PO or designee:

29. Section 2 steps are complete. _____/ _____/ _____
30. If Section 3 is not entered, discard the procedure once the storm threat has passed. _____/ _____/ _____

SECTION 3 Entry Conditions: Hurricane Warning issued for the Louisiana Coast line, and Forecasts indicate RBS is likely to be impacted by sustained winds in excess of 40 mph.

GM-PO or designee:

31. Notify the OSM that Section 3 has been entered. _____/ _____/ _____
32. Ensure appropriate steps of Attachment 9.1 Generic Hurricane Response Checklist are completed as appropriate. _____/ _____/ _____
33. Designate an EOF Administrative/Logistics Advisor to plan and coordinate for the potential activation of hurricane responders:_____ _____/ _____/ _____

Designated EOF Administrative/Logistics Advisor:

34. Plan and coordinate for the potential assembly of hurricane responders. The Advisor should plan and coordinate distribution of hurricane supplies (air mattresses, mattress inflators, blankets, MREs, water) to selected locations, contact cafeteria personnel for cooking during storm, designate sleeping areas, etc. Direct cafeteria staff to make cooking arrangements during severe weather and to obtain cold cuts for storm responders. Obtain any additional materials and supplies identified as required for hurricane responders as necessary. _____/ _____/ _____
35. Ensure appropriate steps of Attachment 9.1 Generic Hurricane Response Checklist are completed as appropriate. _____/ _____/ _____

Superintendent, Chemistry or designee:

36. Complete applicable steps of Attachment 9.1 and ensure reagents and supplies are adequately stocked. _____/ _____/ _____

Manager, Planning/Scheduling and Outages or designee:

37. Complete applicable steps of Attachment 9.1. _____/ _____/ _____

Manager, Radiation Protection or designee

38. Complete applicable steps of Attachment 9.1and ensure extra SCBAs and charged bottles are prepared and in suitable locations. _____/ _____/ _____

Manager, Security or designee:

39. Complete applicable steps of Attachment 9.1 and secure any loose materials at the Security Firing range. _____/ _____/ _____

ATTACHMENT 9.3 RBS SPECIFIC SEVERE WEATHER CHECKLIST

Sheet 5 of 10

Manager, Maintenance or designee:

40. Complete applicable steps of Attachment 9.1and verify site preparations are complete. ____/ ____/ ____

Director, NSA or designee:

41. Complete applicable steps of Attachment 9.1 and keep the NRC informed of activities at RBS. ____/ ____/ ____

Emergency Preparedness

42. Complete applicable steps of Attachment 9.1. Establish 24 hour EP operations in the Storm Monitoring Center. Track the Hurricane/Tropical Storm and provide information and recommendations to the GM-PO or designee. ____/ ____/ ____
43. When hurricane preparations are underway, request management team consider canceling non-essential meetings such as MRM, which prevent the management team from making timely decisions on site severe weather preparations. ____/ ____/ ____
44. Continue to monitor weather information from the National Weather Service, the National Hurricane Center and Entergy Storm Forecasters in order to determine the most probable forecast for RBS. Frequently monitor all NWS Watches and Warnings issued for West Feliciana Parish. Immediately notify the GM-PO or designee and the Control Room of all parish hurricane WARNINGS issued. Continue to update messages on Entergy Info Line. (See Table 9.5.7 page 11 of 12 for update instructions) ____/ ____/ ____
45. Stage satellite phones in Main Control Room and EOF. Test Emergency Plan communications systems. Expedite any necessary repairs. ____/ ____/ ____

GM-PO or designee:

46. Section 3 steps are complete. ____/ ____/ ____

47. If Section 4 is not entered, discard the checklist once the storm threat has passed. ____/ ____/ ____

SECTION 4 Entry Conditions: Sustained Hurricane Force Winds of 74 mph or greater are forecast as probable for River Bend Station. The GM-PO or designee may also direct entry into Section 4 for forecasted sustained winds of less than 74 mph.

GM-PO or designee:

48. All visitors have left the site. ____/ ____/ ____
49. Ensure appropriate steps of Attachment 9.1 Generic Hurricane Response Checklist are completed as appropriate. ____/ ____/ ____

Designated EOF Administrative/Logistics Advisor:

50. Plan and coordinate for the potential assembly of hurricane responders. The Advisor should plan and coordinate distribution of hurricane supplies (air mattresses, mattress inflators, blankets, MREs, water) to selected locations, secure cafeteria equipment access for cooking, designate sleeping areas, etc. Obtain any additional materials and supplies identified as required for hurricane as necessary ____/ ____/ ____

51. Develop a briefing sheet to be distributed to hurricane responders when activated to the site to address basic questions regarding organization, sleeping, food, etc. _____/ _____/ _____

Manager, Maintenance or designee:

52. Complete applicable steps of Attachment 9.1for pre-staging and ensure delivery of MREs, water coolers/dispensers, water, air mattresses, mattress inflators, and blankets to the OCC Conference Room and EOF, or as otherwise directed by the designated Admin/Logistics Advisor. _____/ _____/ _____
53. When possible, secure all unnecessary work on-site. _____/ _____/ _____

Director, NSA or designee:

54. Complete applicable steps of attachment 9.1 and keep the NRC informed of activities at RBS. _____/ _____/ _____

Manager, Security or designee:

55. Complete applicable steps of Attachment 9.1 and prepare to respond under high wind conditions at the site. _____/ _____/ _____
56. Security is prepared to arrange roadblock access for RBS personnel if local law enforcement establishes roadblocks. _____/ _____/ _____
57. Visitor access approval to the site has been restricted to an appropriate level. _____/ _____/ _____

Duty Emergency Planner:

58. Continue to monitor weather information from the National Weather Service, the National Hurricane Center and Entergy Storm Forecasters in order to determine the most probable wind forecast for RBS. _____/ _____/ _____
59. Frequently monitor all NWS Watches and Warnings issued for West Feliciana Parish. Immediately notify the GM-PO or designee and the Control Room of all parish hurricane WARNINGS issued. Continue to update messages on the Hurricane Hotline. _____/ _____/ _____
60. Ensure additional Emergency Planners are on-site within 8 hours of predicted impact on RBS. _____/ _____/ _____
61. Ensure communications links (ESP_COM, State/Local Hotlines, Civil Defense Radio) are functional, and back-up links are functional. _____/ _____/ _____
62. Complete applicable steps of Attachment 9.1. _____/ _____/ _____

Hurricane Response Team TSC Managers and EOF Managers:

63. Upon activation of the Hurricane Response Team, relieve the designated EOF Admin/Logistics Advisor to coordinate personnel and supplies within the Protected Area/GSB and the EOF/Training Center. _____/ _____/ _____

ATTACHMENT 9.3 RBS SPECIFIC SEVERE WEATHER CHECKLIST

Sheet 7 of 10

GM-PO or designee:

64. Section 4 steps are complete. ____/ ____/ ____

SECTION 5 Entry Conditions: Conditions required entry into Section 4, and the NWS indicates the threat has passed or is no longer a threat to the RBS area.

GM-PO or designee:

65. When the National Weather Service or Entergy storm forecasters indicate that the hurricane has passed or is no longer a threat to the RBS area, inform the Control Room and ensure hurricane response team personnel are relieved as soon as practical. ____/ ____/ ____
66. If the unit was shutdown and significant damage within the 10 mile Emergency Planning Zone (EPZ) has occurred, the GM-PO or his designee will exit this procedure and perform a verification of emergency response capability per Reference 2.4 and 2.5. ____/ ____/ ____

Manager, Maintenance or designee:

67. Initiate appropriate clean up and recovery efforts due to the hurricane and complete appropriate recovery steps of Attachment 9.1. ____/ ____/ ____

Duty Emergency Planner:

68. Emergency Preparedness will ensure Emergency Response Facility inventories and readiness checklists are completed, as necessary. Complete appropriate recovery steps of Attachment 9.1. ____/ ____/ ____

Director, NSA or designee:

69. Notify NRC of status. ____/ ____/ ____

ATTACHMENT 9.3 RBS SPECIFIC SEVERE WEATHER CHECKLIST

Sheet 8 of 10

Note
Schedules will be developed under EN-OM-123, Fatigue Management Program, and EN-EP-309, Fatigue Management for Hurricane Response Activities where applicable.

TABLE 9.3.1
HURRICANE RESPONSE TEAM
MINIMUM STAFFING

Section/Organization	Number
Plant Operations Shifts	2 Shifts
Security Shifts	2 Shifts

ERO Facility Minimum Staffing, 2 Shifts:

DAYS TEAM _____ (0600 – 1800) NIGHTS TEAM _____ (1800-0600)

	DAYS TEAM NAME / PAGER	ALPHA	NIGHTS TEAM NAME / PAGER	ALPHA
Emergency Operations Facility:				
Recovery Manager	_____/____		_____/____	
EOF Manager	_____/____		_____/____	
Radiation Protection Advisor	_____/____		_____/____	
Radiation Assessment Coordinator	_____/____		_____/____	
Assistant Radiation Assessment Coordinator	_____/____		_____/____	
Technical Advisor	_____/____		_____/____	
Admin Logistics Advisor	_____/____		_____/____	
EOF Communicator	_____/____		_____/____	
Operations Advisor	_____/____		_____/____	
Operations Support Center				
OSC Director or Manager	_____/____		_____/____	
Fully Qualified RP Technician (1 per shift)	_____/____		_____/____	
Radiation Protection Technician (2 per shift)	_____/____		_____/____	
Nuclear Chemistry Technician (2 per shift)	_____/____		_____/____	
I & C Technicians (2 per shift)	_____/____		_____/____	
Electrical Maintenance (2 per shift)	_____/____		_____/____	
Mechanical Maintenance (2 per shift)	_____/____		_____/____	
Technical Support Center				
Emergency Director	_____/____		_____/____	
TSC Manager	_____/____		_____/____	
Operations Support Coordinator	_____/____		_____/____	
Radiation Protection Coordinator	_____/____		_____/____	
TSC Communicator	_____/____		_____/____	
TSC Security Coordinator	_____/____		_____/____	
Reactor Engineer	_____/____		_____/____	

TABLE 9.3.1 (Cont)

Personnel Listing for Hurricane Response Teams:
Responsible Directors/Managers/Superintendents will enter names and assigned shifts in the official signature copy of this procedure. Numbers in parenthesis are suggestions only, and may be adjusted for the anticipated storm conditions or potential down-power/shutdown work.

Security Computer/Process Computer Support (2)
Names: _____/____ _____/____

Engineering (4)
Names: _____/____ _____/____
Names: _____/____ _____/____

Licensing (1)
Name: _____/____

Planning and Scheduling (2)
Names: _____/____ _____/____
Names: _____/____ _____/____

I&C Maintenance (Communications) Technicians (2)
Names: _____/____ _____/____

I&C Technicians (2 per shift)
Names: _____ _____
Names: _____ _____

Mechanics (2 per shift)
Names: _____ _____
Names: _____ _____

Electricians (2 per shift)
Names: _____ _____
Names: _____ _____

Senior Radiation Protection Technicians (1 per shift)
Names: _____ _____

Radiation Protection Technicians (2 per shift)
Names: _____ _____
Names: _____ _____

Nuclear Chemistry Technicians (2 per shift)
Names: _____ _____
Names: _____ _____

Operations Shift Personnel
Names: _____ _____
Names: _____ _____

TABLE 9.3.1 (Cont)

Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____

Security Shift Personnel

Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____
Names: _____ _____

Emergency Preparedness Personnel

Names: _____/____ _____/____
Names: _____/____ _____/____
Names: _____/____ _____/____
Names: _____/____ _____/____

Any Additional Personnel who are expected to remain on site

Names: _____/____ _____/____ _____/____
Names: _____/____ _____/____ _____/____
Names: _____/____ _____/____ _____/____

ATTACHMENT 9.4 GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST

Sheet 1 of 8

NOTE

1. The implementation of this procedure is the discretion of the Site General Manager, Duty Manager, or designee. He/she may implement this procedure in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, time before storm arrival, existing outside conditions, plant status, site accessibility, availability of inside storage space, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated.

2. Group responsible is suggested only. The task assignment may vary. Step may be signed by someone knowledgeable (Duty EP, Duty Mgr., GM, etc.) that the task was completed.

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
Storm preparations, Staffing and Personnel safety Consideration		
T-5 Five days Prior to Site Impact (Usually when the storm enters the Gulf of Mexico)		
1. Monitor weather information from the National Weather Service, the National Hurricane Center, and Entergy storm forecasters in order to determine the most probable site forecast.	(EP)	____/ ____/ ____
2. Maintain periodic contact and coordinate response with County/Parish and State agencies and the National Weather Service. Confirm Parish or County response and evacuation plans and any actions that may affect the ability to bring responders to the site (bridge closures).	(EP)	____/ ____/ ____
3. Maintain periodic contact and coordinate response with the NRC resident inspectors and Region IV Incident Response Center personnel. Provide the following: • Latest storm position, strength and projected path, • Site meteorology: (15 minute average wind speed and direction, precipitation) • Update of plant preparations/response • Update of Parish or County preparations/response Provide copies of the latest NWS hurricane bulletin reports, including public advisories, probabilities and storm track to the resident inspectors (or alternates) as requested.	(NSA)	____/ ____/ ____
4. Inspect cranes, tractors, generators, forklifts, light sets etc. needed for hurricane preparation/recovery. Initiate any repairs necessary.	(Maint. Supt)	____/ ____/ ____
5. Identify equipment rental needs (generators, light sets) and order additional equipment as necessary.	(Maint. Supt.)	____/ ____/ ____
6. Establish a "ready list" with any critical selected vendors, suppliers, and contractors identified to provide materials and personnel.	(Maint)	____/ ____/ ____

ATTACHMENT 9.4 GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST

Sheet 2of 8

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
7. Identify staffing needs (contractors, shared resources etc.) Initiate process for bringing them in.	(GM)	____/ ____/ ____
8. Initial communication to site personnel made. Update Hotline messages (if applicable) throughout the event to provide information and direction to employees and their families.	(Comm.)	____/ ____/ ____
9. Review work and surveillance schedule to identify activities which may need to be performed early, or delayed, as permitted by Technical Specifications.	(Plng)	____/ ____/ ____
10. Check site drainage ditches and culverts for blockage. Have blocked channels cleared, if necessary.	(Maint)	____/ ____/ ____
11. Notify Radwaste to limit the transport of offsite waste disposal until after the hurricane.	(RP)	____/ ____/ ____
12. Verify adequate supplies of fuel, hydrogen, chemicals, carbon dioxide etc. to prevent a required delivery during the storm.	(Ops)	____/ ____/ ____
13. Return all inoperable equipment or systems to service, if possible, priority to be set by Operations in anticipation of a loss of Off-site power.	(Ops)	____/ ____/ ____
14. Response logs initiated and kept up to date for the duration of the event for each response facility and major area of activity. Use WEBEOC or other computer program used by the fleet.	(EP)	____/ ____/ ____
15. Consider sending out a site broadcast to all personnel. This site broadcast should indicate that all shared resources must be coordinated through the CIRT/CEC located at Echelon.	(Comm)	____/ ____/ ____
16. Evaluate the need to complete an Exemption/Authorization for severe weather responders exceeding working hour limits in accordance with NMM procedure OM-123.	(GM)	____/ ____/ ____

T-4 Four days before impact.

17. Update Entergy Info Line messages (if applicable) 1-877-812-4615 (See Table 9.5.7 page 11 of 12 for update instructions) throughout the event to provide information and direction to employees and their families.	(EP)	____/ ____/ ____

ATTACHMENT 9.4 GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST

Sheet 3 of 8

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
T-3 Three days before impact.		
18. Update Entergy Info Line messages (if applicable) (See Table 9.5.7 page 11 of 12 for update instructions) throughout the event to provide information and direction to employees and their families.	(EP)	____/ ____/ ____
19. Consider backups of emergency computer equipment and application software.	(IT)	____/ ____/ ____
20. Establish plan for alternate method of communicating if normal methods are lost. Verify levels below are available. Primary communication method – Land Secondary – Computer (VOIP, email) Third – Cell phones / Nextel phones Fourth – Satellite	(EP)	____/ ____/ ____
21. Obtain "Port-O-Lets" or other sanitation facilities, if required, for personnel remaining on site and stage inside buildings (Turbine,/Aux/Control/etc) Identify sanitation facilities for male and female use	(Maint)	____/ ____/ ____
22. Conduct operator briefings and/or team simulator training to prepare for possible transients and circumstances which may be caused by the storm or storm related system failures	(Ops) (Trng)	____/ ____/ ____
T-2 Two days before impact.		
23. Update Entergy Info Line messages (if applicable) (See Table 9.5.7 page 11 of 12 for update instructions) throughout the event to provide information and direction to employees and their families.	(EP)	____/ ____/ ____
24. Survey the plant site, including security firing range, training center and other out buildings. Removing trash and debris and secure all loose equipment such as ladders, fire extinguishers, and hose reels, waste containers, life rings, etc. To the extent practical, have loose materials around the owner controlled area that could become missiles removed, stored, or securely tied down (i.e. pipes, boards, tools, and other materials that could be picked up by the wind and hurled through the air at hurricane speeds and cause damage to the plant, site structures or personnel). Area owners are listed on the Maintenance Support Homepage in the Plant Material Condition section. Remove all gas bottles from exterior racks and have them properly stored inside.	(Maint) (Sec) (Ops)	____/ ____/ ____ ____/ ____/ ____ ____/ ____/ ____
25. Review work and surveillance schedule to identify activities which may need to be performed early, or delayed, as permitted by Technical Specifications.	(Maint)	____/ ____/ ____
26. Verify doors and covers on outside equipment such as Transformers, Switchyard equipment, Fire Hose Stations, and Electrical Panels are securely closed.	(Maint) (Ops)	____/ ____/ ____
27. Tie-down trailers and portable buildings with cables and ropes.	(Maint)	____/ ____/ ____
28. Severe Weather duty roster established.	(EP)	____/ ____/ ____

ATTACHMENT 9.4 **GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE AND RECOVERY LIST**

Sheet 4 of 12

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
29. Consider installing temporary flood barriers (sandbags or equivalent) in areas which may be susceptible to flooding. Stage additional temporary flood barriers near susceptible areas. Check quantities and obtain additional temporary flood barriers if necessary. Have Security personnel observe filling so as not to delay their entering the plant, if applicable. (See Table 9.1.1 for details on building a sandbag dike. - Consider pre-staging adequate drain plugs, de-watering pumps and hoses. - Evaluate need to unplug and store temporary Security lights and extension cords that may be in service.	(Maint)	_____/ _____/ _____
30. Consider the following contingencies for loss of the following: EQUIPMENT LOSS / CONTINGENCY a. ENS/Operational Hotline — a. Satellite Telephone b. EOF Ventilation system — b. EOF Diesel & EOF Air Handling Unit operating c. Electrical power to M&E bldg — c. Portable generator/reduced loads d. Electrical power to Admin bldg — d. Portable generator/reduced loads e. Reference Library — e. Disaster Recovery system	(EP)	_____/ _____/ _____
31. Consider initiating any of the following actions for Plant Support buildings and coordinate actions. • Move important records to an elevated position away from windows. • Move high value portable equipment to an elevated area away from windows and cover with plastic. • Power down, unplug, and then move personal computers and printers away from offices with unprotected windows, if unable to move, cover with plastic and tape securely. Backup data as necessary and unplug work station. • Secure unnecessary power to facilities and equipment to reduce the likelihood of fire. • Cover sensitive equipment as necessary. • Ensure doors to rooms with windows are closed. Ensure windows and blinds are closed. • Cover fireproof file cabinets containing QA records with plastic. • Put loose items such as desktop supplies, papers, etc., in desk drawers or file cabinets. • Wrap simulator computers in plastic and tape securely	(GM) (Maint) (IT)	_____/ _____/ _____

ATTACHMENT 9.4 **GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST**

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ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
32. Identify location to serve as Storm Monitoring Center/Command Center. (i.e. OCC, EOF, OSC, TSC, etc.)	(GM)	____/ ____/ ____
33. Set up portable radios, televisions and internet accessible computers in response facilities and Storm Monitoring Center/Command Center as necessary to provide news reports and hurricane position information.	(EP)	____/ ____/ ____
34. Accumulate additional portable communications equipment (including cellular telephones) in the response facilities and Storm Monitoring Center/Command Center as necessary.	(EP)	____/ ____/ ____
35. Verify operability of emergency communications equipment.	(EP)	____/ ____/ ____
36. Develop a briefing sheet to be distributed to Severe Weather responders when activated to the site to address basic questions regarding, organization, sleeping, food, etc.	(EP)	____/ ____/ ____
37. Expand stowing and securing of equipment to include relocation or anchoring of radioactive or potentially radioactive items, such as, materials (sources, etc.) in stores facilities, sea-land containers, radiography equipment, etc.	(RP)	____/ ____/ ____
38. Consider deposting of outside radioactive materials areas (procedure deviation) to prevent stanchions from becoming missiles.	(RP)	____/ ____/ ____
39. Consider lifting radioactive materials off the ground surface.	(RP)	____/ ____/ ____
40. Ensure ambulance is serviceable and all medical supplies are current, available and stored in designated areas.	(RP)	____/ ____/ ____
41. Remove the Aux Cooling Tower (ACT) tarpaulin covers and store covers to preclude damage.[Hurricane Gustav OE CR-GGN-2008-4358]	(Maint)	____/ ____/ ____
42. Establish a tool and spare parts area in a secure location to provide a minimum number of tools for each maintenance discipline to use in an emergency. Ensure a sufficient number of chain saws are available.	(Maint)	____/ ____/ ____
43. Verify operability of EOF and Telecom diesel generators. Ensure adequate fuel available.	(EP)	____/ ____/ ____

ATTACHMENT 9.4 **GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST**

Sheet 5 of 8

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
44. Evaluate need to start and test alternate electric supply to TSC/EOF (i.e. diesel, UPS)	(EP)	____/ ____/ ____
45. Prepare and stage extra SCBAs and charged bottles in suitable locations.	(RP)	____/ ____/ ____
46. Verify sufficient emergency supplies are available and staged.	(EP)	____/ ____/ ____
47. Stage water for both drinking and sanitation purposes.	(Maint)	____/ ____/ ____
48. Ensure Hotline is ready for use. Disseminate Severe Weather Hotline number to site personnel.	(EP)	____/ ____/ ____
49. Evaluate need to provide for disposal of human waste at remote stations since the sewage system may be out of service.	(Maint)	____/ ____/ ____
50. Evaluate need to open all outdoor 480V receptacles circuit breakers.	(Maint) (OPS)	____/ ____/ ____
51. Evaluate the need to wrap, elevate, relocate or otherwise protect spare motors, parts and/or tools that may be required for recovery.	(MP&C)	____/ ____/ ____
52. Consider assigning someone to video tape plant area prior to storm and again immediately after storm for event record and insurance purposes.	(GM)	____/ ____/ ____
53. Evaluate if Emergency Medical coverage is needed. (i.e. First Responders, EMTs, Doctor, Nurse)	(GM)	____/ ____/ ____
54. Verify the staffing of the Corporate Emergency Center (CEC)	(EP)	____/ ____/ ____

T-1 One Day Prior to Impact

55. Update Entergy Info Line messages (if applicable) (See Table 9.5.7 page 11 of 12 for update instructions) throughout the event to provide information and direction to employees and their families.	(EP)	____/ ____/ ____
56. Maintain periodic contact and coordinate response with County/Parish and State agencies and the National Weather Service. Confirm Parish or County response and evacuation plans and any actions that may affect the ability to bring responders to the site (bridge closures).	(EP)	____/ ____/ ____
57. Severe Weather Responders briefed on personal, plant, family preparations prior to callout.	(EP)	____/ ____/ ____
58. When possible, secure all unnecessary work on-site and release nonessential personnel.	(GM) (Maint)	____/ ____/ ____
59. Ensure all visitors have left the site.	(Security)	____/ ____/ ____
60. Evaluate unnecessary personnel in the protected area and all visitors in the Owner Controlled Area.	(Security)	____/ ____/ ____

ATTACHMENT 9.4 **GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST**

Sheet 6 of 8

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
61. When possible, release Severe Weather Responders and other designated additional personnel required to be on-site to attend to personnel issues. Have them prepared to report back to the site as designated by Duty Manager. Time: _____	(GM)	____/ ____/ ____
62. Consider supplying transportation to response personnel to minimize personal vehicles onsite.	(GM) (EP)	____/ ____/ ____
63. Notify additional personnel to support operations and maintenance.	(Ops) (Maint)	____/ ____/ ____
64. Alternate site (Reactor Auxiliary Building, Backup EOF, etc.) identified for staging of response personnel based on NWS wind and flood projections.	(EP)	____/ ____/ ____
65. Protect exposed windows and doors with plywood and/or tape, as applicable.	(Maint)	____/ ____/ ____
66. Predetermine if existing electrical services to temporary site facilities, (portable buildings, trailers), should be shutdown. Establish a time frame for such action if deemed necessary and implement the shutdown.	(Maint) (Ops)	____/ ____/ ____
67. Top off all site vehicles fuel tanks.	(EP) (Maint)	____/ ____/ ____
68. Ensure emergency vehicle repair equipment is on hand (i.e., flat tire materials, extra gas, oil, diesel, etc.)	(Maint)	____/ ____/ ____
69. Order food supplies from cafeteria supplier and set up food in designated areas. Cafeteria Support provide ice chests, coolers, hand trucks, etc. to prepare for movement of food services to the designated areas when necessary.	(EP)	____/ ____/ ____
70. Use cafeteria staff to prepare food and beverages as long as possible until they have to evacuate.	(EP)	____/ ____/ ____
71. Install life lines between or around important operating equipment areas as needed. Determination made by Operations staff.	(Ops)	____/ ____/ ____
72. Limit access to all operable diesel generators.	(Ops)	____/ ____/ ____
73. Ensure that temporarily stored hazardous chemicals are moved inside buildings.	(Maint) (OPS)	____/ ____/ ____
74. Evaluate need to lower and secure high-mast security lighting.	(Security) (Maint)	____/ ____/ ____
75. Ensure communications are available to allow employees to check with families.	(IT)	____/ ____/ ____
76. Provide a list of names of personnel that will remain on site for the duration of the storm to the Corporate Emergency Center.	(EP)	____/ ____/ ____
77. Obtain a contact phone number of plant personnel who will not remain on site during the storm (i.e., cell & home phone).	(EP)	____/ ____/ ____
78. Participate in both management and executive conference calls with the Entergy Transmission and Distribution emergency response team.	(GM)	____/ ____/ ____
79. Establish a staging location for recovery team following the hurricane and ensure the location is known to required personnel.	(EP)	____/ ____/ ____

ATTACHMENT 9.4 GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST

Sheet 7 of 8

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
T-0 Just prior to impact		
80. Update Entergy Info Line messages (if applicable) (See Table 9.5.7 page 11 of 12 for update instructions) throughout the event to provide information and direction to employees and their families.	(EP)	____/ ____/ ____
81. Secure vehicles out of path of Severe Weather or inside, (such as in the Unit II Turbine Building,) if possible. Bring keys to designated area.	(Maint)	____/ ____/ ____
82. Move electric carts, forklifts, movable cranes and emergency response equipment and supplies into buildings if possible.	(Maint)	____/ ____/ ____
83. Remove unnecessary vehicles from the protected area and parking lots.	(Security)	____/ ____/ ____
84. Fuel pool is safe from falling overhead objects, and cranes are secure.	(OPS) (Maint)	____/ ____/ ____
85. Provide backup emergency equipment for fire suppression, flood protection, power supplies, etc.	(Maint)	____/ ____/ ____
86. Consider a portable generator to carry some nonessential loads.	(Maint)	____/ ____/ ____
87. Unnecessary vehicles removed from the PA and parking lots.	(Security)	____/ ____/ ____
88. Evaluate need to evacuate unnecessary personnel in the protected area and all visitors in the Owner Controlled Area.	(GM)	____/ ____/ ____
89. All stationary/movable cranes secured/moved to an area out of path of hurricane and/or raise all crane hooks to the top, and install lock bolts as necessary.	(Maint)	____/ ____/ ____
90. Additional personnel to support operations and maintenance briefed.	(Ops) (Maint)	____/ ____/ ____
91. Establish accountability for all personnel on site. (Duty Manager, Emergency Director or OEC permission required to leave established protected areas or travel offsite with callback and/or return times.)	(EP) (Security)	____/ ____/ ____
92. Close outside rollup doors	(Maint) (Ops)	____/ ____/ ____
93. Establish contact with the Corporate Emergency Center (CEC) Provide a list of names of personnel that will remain on site for the duration of the storm.	(OEC)	____/ ____/ ____
94. Make periodic plant page announcements with Shift Manager and/or Duty Manager concurrence to update site personnel of storm status and response activities.	(Ops)	____/ ____/ ____
95. Establish daily briefing of NRC Sr. Management by Entergy Nuclear South executive team.	(VP)	____/ ____/ ____
96. Activate the Emergency Response Data System (ERDS) for NRC access of meteorological and other plant data when the NRC Incident Response Center is staffed.	(Ops)	____/ ____/ ____
97. Station operations and/or maintenance personnel in vital areas prior to the storm. This applies to areas not accessible without going outside.	(Maint) (Ops)	____/ ____/ ____

ATTACHMENT 9.4 GRAND GULF NUCLEAR STATION SEVERE WEATHER RESPONSE CHECKLIST

Sheet 8 of 8

ITEM	GROUP RESP	COMPLETED BY TIME/DATE/INITIALS
During Impact		
98. Make periodic plant page announcements with Shift Manager and/or Duty Manager concurrence to update site personnel of storm status and response activities.	(Ops)	____/ ____/ ____
99. Conduct periodic accountability checks or roll calls to ensure personnel remaining on site are present and accounted for.	(Security)	____/ ____/ ____
100. Consider application of 10CFR50.54(x) and (y) for protecting the plant, safety of personnel and public health and safety (i.e., suspension of safeguards, discontinuance of outside surveillance activities).	(Ops)	____/ ____/ ____
101. Minimize security patrols as storm worsens.	(Security)	____/ ____/ ____
102. Consider relocating outside security personnel that are in posting huts, particularly any postings in elevated areas. Winds may be higher in elevated levels than they are at ground level, even with relatively small elevation changes.	(Security	____/ ____/ ____
103. Keep the telephone bank operators located at Echelon CEC updated on plant conditions, personnel accountability, weather conditions, Parish/County response, road conditions, and curfews. Status of road conditions and curfews is particularly important when the return to work message is given.	(EP)	____/ ____/ ____

ATTACHMENT 9.5 — ECHELON SEVERE WEATHER CHECKLIST

Sheet 1 of 12

NOTE

The implementation of this procedure is the discretion of the VP Operation Support, Duty Manager, CEC Manager or designee. He/she may implement this procedure in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, time before storm arrival, existing outside conditions, plant status, site accessibility, availability of inside storage space, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated. This form or a similar form may be used.

ITEM	COMPLETED Date / INITIALS
Augmented Staffing and Facility Preparations	
1. Approximately 72 hours prior to severe weather affecting any Entergy site, notify CEC staff pool of potential impact.	_____/ _____
2. Notify IT to consider switching computer applications from hurricane affected area to disaster recovery sites.	_____/ _____
3. Preparations for severe weather should start at least 36 hours before wind/flooding/ice is forecast to affect an Entergy site.	_____/ _____
4. Severe weather duty roster established. This includes Corporate Duty Manager, CEC Manager, and CEC staff. Complete Table 9.5.1	_____/ _____
5. Perform walk-down of facility for any safety issues	_____/ _____
6. Assign an Accountability Officer for the CEC and support rooms. Brief the CEC staff on emergency shelter or evacuation (EN-IS-119) and response to fire or tornado warning.	_____/ _____
7. Conduct any just in time training for CEC Staff or Site personnel assigned to CEC.	_____/ _____
8. Arrangements made for the accommodation of employees' families. Complete Table 9.5.3, 9.5.4 and 9.5.8 as applicable.	_____/ _____
9. Family Support Coordinator(s) and other Jackson Response Team members identified, briefed (Complete just in time training) and pre-staged.	_____/ _____
10. Establish communications link to allow employees to check with families.	_____/ _____
11. Use the Echelon CEC phone lines as coordination point.	_____/ _____
12. Verify with Building Maintenance that both diesel generators are functional and topped off with fuel. Direct Building Maintenance and IT to test the diesel generators, as necessary, if the last test was not within the last 7 days.	_____/ _____
13. (EP) Create a phone list of the following numbers and post in CEC. • Storm Center / Storm Boss • Site phone numbers (i.e. OCC, Command Center, TSC) • Numbers of key management at each site and CEC	_____/ _____

ATTACHMENT 9.5 **ECHELON SPECIFIC SEVERE WEATHER CHECKLIST**

Sheet 2 of 12

14. Maintain a list of names of personnel that will remain at the affected site for the duration of the storm. (Request each site to fax their list.) _____/ _____

15. Designate 2 to 4 SMEs (i.e., electrical engineer) as Storm Center liaisons for activities between the CEC and Storm Center. Consider deploying two per shift, one at the CEC and one at the Storm Center based on storm impact on a site's operation or restart. _____/ _____

16. MP&C verify that contracts are in place for Helicopter service and Fuel oil for Echelon Diesel. _____/ _____

17. Contact Entergy Northeast and inform the Northeast Corporate Support Center lead of ENS plans. Request them to be on notice so that they could take over coordination if CEC in Jackson becomes incapacitated due to storm or they may be requested to provide support depending on storm affect. _____/ _____

- Corporate Support Manager (Group page 1-800-425-3832)
- Corporate Support Center Coord. (Group page 1-914-445-0011)

18. Stock the CEC with office supplies. Order office supplies such as pens, pencils, dry-erase markers, staples, paper clips, binder clips, note pads, post-it note pads, post-it tape strips, etc for the CEC and paper for the copiers and printer. Obtain both plain and 3-hole punch 8.5" X 11" paper. Verify plotter paper is available. _____/ _____

Coordination of Activities

19. Implement 24 hour CEC operations as necessary. _____/ _____

20. Establish routine conference calls with site Management with reasonable time between calls. _____/ _____

21. Maintain chronological logs in the CEC using WEBEOC. _____/ _____

22. Set up computerized hurricane tracking programs and track the storm throughout the event at the CEC. _____/ _____

23. Participate in management conference calls as necessary. _____/ _____

24. Update Entergy Info Line messages 1-877-812-4615 as directed by affected sites. (See Table 9.5.7 page 11 of 12 for update instructions) Purpose of these updates is to provide information and direction to employees and their families. Ensure Waterford hotline and RBS hotline only has information relative to that specific site. See Table 9.5.2. _____/ _____

ATTACHMENT 9.5 **ECHELON SPECIFIC SEVERE WEATHER CHECKLIST**

Sheet 3 of 12

25. Contact Building Maintenance and arrange for ventilation (Heat/AC) during back shifts and weekends. _____/ _____
26. Evaluate need for staging additional diesel fuel. _____/ _____
27. If AC power is lost to the Echelon Building, the diesel will automatically start and power the CEC. Once diesel starts, the fuel must be periodically monitored. _____/ _____
28. All pool vehicles returned to Echelon and topped off with fuel (as applicable). _____/ _____
29. Set up telephones, televisions, Fax machines, and internet accessible computers in the CEC. _____/ _____
30. Accumulate additional portable communications equipment (including cellular, Nextel, and satellite phones) in the CEC as needed. _____/ _____
31. Ensure Severe Weather employee Info line is ready for use. Complete Table 9.5.7, as applicable. _____/ _____
32. Charge satellite phone batteries. _____/ _____
33. Order food supplies or arrange for food deliveries. Provide ice chests, coolers, etc. as needed. _____/ _____
34. Ensure storm response personnel are at Echelon within 24 hours of predicted impact to plant sites, as deemed necessary. _____/ _____
35. Maintain family message board. Check with the affected site and obtain regular updates on the status of plant personnel riding out the Hurricane – coordinate site specific information updates with the Site Family Coordinator for dissemination to families staying at the hotel. _____/ _____
36. When arranging shared resources, direct the shared resources or contractors to bring personal items such as clothing, toiletries, etc for their expected stay at the site. The requesting site should advise whether the responder should bring sleeping items such as cot, blankets, pillows, etc. _____/ _____
37. After the storm or hazard has passed and no longer a threat, exit this procedure and enter ENS-EP-303, Severe Weather Recovery. _____/ _____

TABLE 9.5.1
Example CEC Shift Structure.

The CIRT Director will evaluate the event and assign the organization as applicable to the event

Note
Schedules will be developed under EN-OM-123, Fatigue Management Program, and EN-EP-309, Fatigue Management for Hurricane Response Activities.

DAY / NIGHT SHIFT POSITION (circle one)	NAME	CONTACT NUMBERS Work Mobile Home	Recommended Location / CEC or office contact phone #
CIRD			CEC /
CEC Manager (CDM)			CEC /
EP			CEC /
MP&C			CEC /
IT			CEC /
Shared Resource Coordinator			CEC (when needed) /
Engineering			CR 103 / Office /
Security			CEC /
HR			CEC /
Business Services			CEC (when needed) /
Licensing			CEC (when needed) /
Storm Center Liaison (goes to storm center)			Storm Center / (when needed)
Storm Center Liaison (located at CEC)			CEC Communications room or conference room /
Media/Corp Communications			Office / CEC Communications room when needed /
Administrative			As assigned /
CEC Support Staff			As assigned /
WF3 Jackson Response Team Lead			EP in CEC / Team in CR 106 and CR 107
Plant Restart Lead			CR 101
Other			

The Jackson Response Team may stage in CR106 to coordinate with the family support coordinators and WF3. Other locations/offices will be used if GGNS has declared an Alert or higher and the JIC is operational.

TABLE 9.5.2
Employee Hotline Messages

Early Message

LEAD:	"This is the Entergy Info Line for Echelon. This message is for (Time) on (Day of Week and Date)."
LATEST EVENT SUMMARY:	
INSTRUCTIONS (IF ANY) OR INFORMATION FOR HURRICANE RESPONDERS/ JACKSON TEAM:	
STATUS OF NORMAL WORK SCHEDULES (REQUIRED FOR MESSAGE):	
STATUS OF NORMAL AND EMERGENCY DUTY ROSTERS (REQUIRED FOR MESSAGE):	
INSTRUCTIONS (IF ANY) OR INFORMATION FOR ALL EMPLOYEES	
CALL BACK TIME:	"This message will be updated at (Time) on (Day of Week and Date).
CLOSING:	"End of Message."

ATTACHMENT 9.5 **ECHELON SPECIFIC SEVERE WEATHER CHECKLIST**

Sheet 6 of 12

TABLE 9.5.2 (Cont)

Staffing/Evacuations

LEAD:	"This is the Entergy Info Line for Echelon. This message is for (Time) on (Day of Week and Date)."
LATEST EVENT SUMMARY:	
INSTRUCTIONS (IF ANY) OR INFORMATION FOR HURRICANE RESPONDERS/ JACKSON TEAM:	"On-shift personnel designated as hurricane responders reporting for the night shift on (Day of Week and Date) should be prepared to stay at the plant for the duration of the storm. Day shift personnel reporting for (Day of Week and Date) designated as hurricane responders should be prepared to stay at the plant for the duration of the storm. Designated site Severe Weather Responders report to (Location) at (Time) on (Day of Week and Date) and be prepared to remain onsite. If this direction changes, you will be notified by VNS, this Entergy Info Line, or some other means. The Jackson Team will be notified by the Team Leader for rendezvous information but is required to respond on (Day of Week and Date). All Emergency Plan responders who are not Severe Weather responders are now released."
STATUS OF NORMAL WORK SCHEDULES (REQUIRED FOR MESSAGE):	"All normal work schedules are cancelled until further notice due to (State reason: parish/county evacuation orders, etc.)
STATUS OF NORMAL AND EMERGENCY DUTY ROSTERS (REQUIRED FOR MESSAGE):	"All normal and emergency duty rosters are secured until further notice."
INSTRUCTIONS (IF ANY) OR INFORMATION FOR ALL EMPLOYEES	"All site personnel are expected to maintain contact with the plant through the emergency hotlines for more information on severe weather response and work schedules."
CALL BACK TIME:	"This message will be updated at (Time) on (Day of Week and Date).
CLOSING:	"End of Message."

TABLE 9.5.3
Family Coordinator Activities

1. Coordinate activities with the CEC Manager. The CEC Manager provides a local area knowledgeable liaison to employees domiciled at Jackson.

2. Site family Support Coordinators should meet families as they arrive and provide them with initial briefing information.

3. Maintain a list of site employee families with their hotel room numbers (or other location). Gather any other family contact information as necessary, including pager, cellular, etc.

4. Provide families with WF3 Jackson Response Team contact information, including room numbers, telephone numbers, pager numbers, etc. Provide the toll free number that will allow families' access to the Jackson Response Team at the Corporate Emergency Center at Echelon.

5. Be prepared to assist with emergency medical, dental, pet boarding needs, etc. Coordinate with the CEC Manager.

6. Establish and maintain a message board or easel at the lodging location.

7. The CEC Manager should establish and supervise the telephone bank at Echelon. This activity should be closely coordinated with the WF3 Jackson Response Team. Establish a process to get messages to and from the Family Support Coordinators (and message board).

   - The number to call for additional information on work schedules and site activity updates as a hurricane approaches is Entergy Info Line 1-877-812-4615. This line is intended to be used after-hours or on weekends when information is not readily available from regular sources.

   - The number to call at Echelon One in Jackson, Mississippi for information if local communications are lost or to request assistance is Entergy Info Line 1-877-812-4615. Entergy Operations, Inc. will provide assistance in locating accommodations for families that are evacuating.

TABLE 9.5.4
Hotel Contact Information

- Employee:
  - Employee Name _____
  - Work Location _____
  - Position _____
  - Phone Contact Number _____

- Family:

  Hotel contact(s) from _____(plant name)_____:
  - Hotel _____
  - Phone Number _____
  - Number of Family Members _____
  - Name(s) _____
  - Room Number(s) _____
  - Pager Number(s) _____

  Families maintain contact through the Entergy Employee Info line.

- Notes: _____
  _____
  _____
  _____
  _____

TABLE 9.5.5
Example List Important Response Telephone Numbers

- Important Telephone Numbers

> **NOTE**
>
> Do not call the Control Room for status or with questions. Call the Command Center.

Entergy Employee Info Line 1-877-812-4615

Waterford _____

WF Command Center _____

River Bend _____

RBS Command Center _____

Grand Gulf _____

GGNS Command Center _____

ANO _____

ANO Command Center _____

Storm Center _____

_____

_____

Key Management

ANO _____

GGNS _____

RBS _____

WF3 _____

TABLE 9.5.6
Shift Turn Over

Step	Activity	Complete
1	Discuss Location of Storm	
2	Discuss status of Checklist	
3	Discuss key log entries	
4	Discuss Lodging Status - Family List - List of Sequestered Employees	
5	Discuss any required Actions of CEC	
6	Discuss any Key Communication Links	
7	Discuss Duty Schedule	
8	Discuss Status of 1-800 Numbers	
9	Discuss any Mgt requested decisions	
10	Other items as necessary	

TABLE 9.5.7
Severe Weather Entergy Employee Info Line Information

Severe Weather Entergy Info Line is a single line for all Entergy Employees

The following instructions are provided for accessing the Entergy Employee Info Line:

The Entergy Employee Info line number is 1-877-812-4615

1. To access the mailbox dial 800-658-7828
   - Entergy User Access Code 846110 and #
   - Enter Pin Number 55599230 and #- pause while entries are validated.
2. Enter the announcement ID as indicated below:
   - Waterford 3 information ID D31513
   - Riverbend Information D31516
   - Grand Gulf information D31521
   - ANO information D31494
   - Echelon D31499
   - Nuclear Introduction D31606
3. Press 3 for 'D' set or 7 for 'S' set, the numeric digits of the announcement number and #.
4. The announcement ID is repeated back to confirm. Press 1 if correct – entry combination is validated, the status is confirmed as updateable, and whether the announcement is shared.
5. Record at the tone and press # if OK. If not OK, press any digit to cancel. Maximum recording length is 4 minutes.
6. To listen to the new recording, press 0.
   - To approve, press 1.
   - To re-record, press 2.
   - To cancel, press 6.
7. Please allow up to 15 minutes for the update to be completed
8. To update another announcement, press 1.
9. To exit, press 7 or hang up.

TABLE 9.5.8
Hotel Arrangements

Making Hotel Arrangements for EOI Nuclear Site – Affected by Severe Weather

Step	Activity	Complete
1	Affected site notifies Echelon to proceed with making hotel reservations. • Identify the number of rooms required • Identify how the rooms will be paid for • Identify site personnel and family members (by name) who will be staying in the rooms • Identify special needs for elderly care, medical, pets, etc.	
2	During normal work hours work with Echelon personnel to make reservations based on identified needs: • Coordinate hotel arrangements with Billy Howell (System Outage Response) or designated liaison at the Storm Center.	
3	If Hotel rooms are not available, place displaced families with local Entergy families if possible.	
4	Contact affected site and notify what arrangements have been made • Provide confirmation numbers and contact numbers for the hotel • Notify the sites when reservations will require payment guarantees	
5	Work with the affected site and the hotel to ensure arrangements are adequate and the hotel rooms are being held as required • The site will send a personnel coordinator to work with the hotel and ensure arrangements for arriving site personnel and their family members are adequate and charges are being appropriately handled.	

ATTACHMENT 9.6 **SUGGESTED EMERGENCY SUPPLIES LIST**

Sheet 1 of 1

SUGGESTED EMERGENCY SUPPLIES

Emergency Response personnel should consider the following items in staging of foodstuffs and supplies for use.

Kitchen

Saucepans
Fry Pans
Gas Grill
Kitchen Knife
Large Bowls
Rain Gear
Soap
Dish Detergent
Tape
- Masking
- Duct

Medical

Advil
Aspirin
Cough Syrup
Alka-Seltzer
Pepto-Bismol
Tylenol PM
Benadryl
Dimetapp
Imodium AD
Cold Medicine

Bedding

Air Mattresses
Blankets
Pillows
Bath & Face Towels

Supplies

Flashlights
Batteries
Radios
Cellular Phones
First Aid Kits
Rope
Ice & Ice Chests
Toiletries
- Shaving Cream
- Razors
- Shampoo
- Bath Soap
- Toothbrush
- Toothpaste
- Sanitary Napkins
Garbage Bags
Disposable Tableware
Can Opener

Perishables

Bread
Candy Bars (Assorted)
Chips (Assorted)
Butter
Ham
Cheese
Bologna
Chicken
Hamburger
Hot Dogs
Sausage
Bacon
Eggs
Lettuce
Tomatoes
Fresh Fruit (Assorted)
Red Beans
Rice
Assortment of Onions/Seasonings

Non-Perishables

MREs
Meat Dishes - (Manwich, Sloppy Joes, Vienna Sausages)
Peanut Butter
Jelly/Jam
Soft Drinks (Assorted)
Pudding Can (Assorted)
Coffee
Fruit Juices (Assorted)
Ketchup
Mayonnaise
Mustard
Pork & Beans
Cooking Oil
Vinegar
Sweet and Low or Equal
Salt & Pepper
Canned Chili - Hot Dogs
Can Vegetables - Assorted
Beef Consume
Coffee Creamer
Bottled Water and/or tap water (drawn before storm arrival and stored in appropriate containers)
Sugar (packets)

UNITED STATES
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR REACTOR REGULATION
WASHINGTON, D.C. 20555-0001

March 28, 1997

NRC ADMINISTRATIVE LETTER 97-03: PLANT RESTART DISCUSSIONS FOLLOWING NATURAL DISASTERS

Addressees

All holders of operating licenses or construction permits for nuclear power reactors.

Purpose

The U.S. Nuclear Regulatory Commission (NRC) is issuing this administrative letter to inform addressees about a recently adopted internal practice. This practice involves coordinating the assessment of offsite recovery and onsite restart activities following a natural disaster (hurricane, tornado, flood, storm, earthquake, etc.) where offsite damage may be substantial or undetermined. This administrative letter does not transmit or imply any new or changed requirements or staff positions. No specific action or written response is required.

Background

Numerous events have occurred in recent years in which natural disasters have affected power reactor facilities. Most notable of these is Hurricane Andrew and its impact on the Turkey Point Station. The licensee for the Turkey Point plant shut the reactors down in anticipation of the storm. Onsite damage from the hurricane was extensive. After that event, the licensee repaired the damage and was ready to restart the plant before the offsite emergency preparedness infrastructure was ready to support the restart. An assessment of offsite conditions and infrastructure prior to restart was necessary to assure emergency preparedness in the event of a subsequent reactor accident.

Events have also occurred in which plants have shut down in anticipation of hurricane damage, which turned out to be minimal. Despite the absence of onsite damage, either some offsite damage occurred that affected the state of offsite emergency preparedness, or some damage occurred offsite such that the state of offsite emergency preparedness could not be determined immediately. For these cases, the NRC coordinated with the Federal Emergency Management Agency (FEMA) and the licensees involved to ensure that the restarts occurred after the offsite emergency preparedness infrastructure could safely support them.

ATTACHMENT 9.7 **NRC ADMINISTRATIVE LETTER 97-03**

Sheet 2 of 3

Discussion

Although the overall responsibility for confirming the adequacy of radiological emergency preparedness of commercial nuclear power plants is vested with the NRC, it relies on FEMA's assessment of offsite emergency planning and response activities when carrying out this responsibility.

Section III of the Memorandum of Understanding (MOU) Between FEMA and the NRC, dated June 17, 1993, lists responsibilities for both agencies for cooperating in the recovery from a disaster that affects the offsite emergency preparedness infrastructure surrounding power reactors. FEMA's headquarters (HQ) in Washington, D.C., is responsible for providing findings and determinations to the NRC concerning the adequacy of offsite preparedness in the areas surrounding power reactor sites following a severe natural event. FEMA HQ bases its assessment on information from State and local governmental authorities, as well as from the affected FEMA regional office and the NRC.

In two recent instances (Hurricane Bertha, July 1996 and Hurricane Fran, September 1996), FEMA HQ chartered special evaluation teams to assess whether the offsite emergency preparedness infrastructure could support the restart of plants that had shut down in anticipation of hurricanes that affected the sites. These teams consisted of FEMA and NRC regional representatives, State and local emergency management representatives, and, in a limited capacity, power reactor licensee personnel. These teams provided assessments to FEMA HQ for its ultimate determinations that offsite emergency preparedness could support plant restart in both cases. The chartering of these special evaluation teams helped ensure a timely assessment of the condition of the offsite infrastructure and was based on experience gained with Hurricane Opal (October 1995) and the Quad Cities tornado (May 1996).

In some cases, a natural disaster may occur where onsite damage is minimal, but offsite damage may be substantial or undetermined. In these cases, the plant may be ready to start up shortly after the event. Communications in these cases between the licensee and NRC, the NRC and FEMA, and FEMA and offsite officials will be aggressive; however, stringent protocols will be observed to ensure that FEMA and the NRC operate within the guidelines of the MOU.

The NRC uses FEMA's determinations to inform power reactor licensees when the condition of the offsite emergency preparedness infrastructure can support a reactor restart. The Office of Nuclear Reactor Regulation (NRR), as well as NRC regional offices, have adopted a communication protocol that links key personnel in the two agencies and the affected licensee organization. An overview of this protocol is attached. Some of the key points of this protocol are:

1. NRC regional office personnel maintain close contact with the affected power reactor licensee to determine the state of onsite emergency preparedness and the plans for restart. The NRC regional office communicates this information rapidly to NRR.

2. FEMA regional office personnel maintain close contact with their evaluators in the field, the affected State and local emergency management officials, and the affected NRC regional office to determine the state of offsite emergency preparedness. The FEMA regional office communicates this information rapidly to FEMA HQ.

3. The final assessment that offsite emergency preparedness can support a power reactor restart originates from FEMA HQ.

4. A single individual in NRR serves as the point of contact with FEMA HQ to receive this assessment. The individual communicates this information rapidly to NRR management and the cognizant NRC regional office.

5. After the assessment from FEMA is received and discussed with NRR management, the NRC regional administrator informs the affected licensee that the condition of the offsite emergency preparedness infrastructure can support a safe reactor restart.

The NRC has developed this protocol as a result of discussions with FEMA, as well as lessons learned from Hurricane Andrew and other events. The objective of this protocol is to ensure that aggressive and rapid information flow occurs between the involved organizations following natural disasters at power reactors. The NRC expects that the use of this protocol will ensure that the determination that the condition of the offsite emergency preparedness infrastructure can support a reactor restart will be made before the licensee is actually ready to restart the reactor plant(s). In the event that the determination is not made before the licensee is ready to restart the plant(s), the NRC will evaluate the need to delay the restart through the issuance of an order or confirmatory action letter. By accomplishing this protocol, the licensee, FEMA, and NRC can provide for safe and rapid restarts of power reactors in the wake of these disasters and assure that the offsite emergency preparedness infrastructure can function as expected if called upon in an emergency.

This administrative letter requires no specific action or written response. If you have any questions about this letter, please contact the contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

signed by

Thomas T. Martin, Director
Division of Reactor Program Management
Office of Nuclear Reactor Regulation

Contact: W. Maier, NRR
(301) 415-2926
E-mail: wam@nrc.gov

Attachments:
1. Information Flow for Restart Considerations Following Natural Disasters at Power Reactors

ATTACHMENT 9.8 **HURRICANE RESPONDERS FAMILY INFORMATION SHEET**

Sheet 1 of 1

1. NAME (Hurricane responder)_____

   FAMILY MEMBER NAME#1_____

   FAMILY MEMBER RELATIONSHIP TO EMPLOYEE#1_____

   FAMILY MEMBER NAME#2_____

   FAMILY MEMBER RELATIONSHIP TO EMPLOYEE#2_____

   FAMILY MEMBER NAME#3_____

   FAMILY MEMBER RELATIONSHIP TO EMPLOYEE #3_____

   FAMILY MEMBER NAME#4_____

   FAMILY MEMBER RELATIONSHIP TO EMPLOYEE #4_____

2. CONTACT NUMBER (OR CELL PHONE) OF HOTEL GUEST_____
3. EXPECTED DATE/TIME OF ARRIVAL_____
4. EXPECTED DATE/TIME OF DEPARTURE_____
5. HOME ADDRESS OF HOTEL GUEST_____

   _____

7. NAME OF CHILDREN'S SCHOOL_____
8. EMAIL ADDRESS OF HOTEL GUEST_____

ATTACHMENT 9.9 SEVERE WEATHER MISSILE HAZARD REDUCTION STANDARD

Sheet 1 of 2

Purpose: to identify the standards to be applied to plant materials and miscellaneous equipment, so that the Duty Manager and site support personnel will understand what the term "Secured for severe weather" means. The goal is to reduce the chances of "light material" missile damage on plant facilities/operation and also to reduce the impact on the security force from flying debris (visibility of camera operators, setting off of sensors and intrusion detectors, etc.).

Site personnel should use best judgment to apply the standard in site severe weather preparations.

Note

The standards mentioned herein apply to weather conditions in which weather forecasts are known to likely impact the site with sufficient lead time to make preparations (i.e.-Remnants of a hurricane/tropical storm or a predicted strong frontal boundary passage). It is not meant to be mistaken as a requirement for a sudden isolated afternoon thunderstorm.

Assumptions: Securing devices such as ½ inch rope, large tie wraps, etc. have sufficient tensile strength to bundle material into weights of ~100 pounds to prevent them from becoming airborne hazards in straight line winds below 70 miles per hour. It does not take into account nor try to counteract the affect of vortex winds from tornados although these standards will help.

1. *Trash Receptacles 50 gallon size or less* - holes drilled in the container that allow the body to be secured to a fence, post or building with large tie wrap or ½ inch rope; top attached to the body with similar material with sufficient slack to allow emptying of the barrel/can. Some decorative trash receptacles are weighted in the bottom and would not require securing.

2. *Large Trash Dumpsters* - these units need to be emptied if at all possible prior to the arrival of the severe weather. If they cannot be emptied they need to be covered with hinged lids, covered with secured tarps, or by placing heavy material such as wooden pallets on top of the material.

3. *Scaffolding Material* - even if the components are held in racks, scaffolding needs to be secured. As a minimum scaffold poles, pick boards and braces need to be secured in the middle of any 5 or 6 foot length component with a ½ rope or with the approved tie downs that come with scaffold racks; placing orange safety snow fence over a large scaffold rack or storage area and securing it down will also suffice; folding/rolling scaffold units that approximate 70-100 lbs do not require securing unless they are likely to roll away in a strong wind; if scaffold is in an enclosed shed, it is not necessary to tie it down.

4. *Flat Sheet Material* – plywood or light weight sheet metal - secure with ½ inch rope in middle of the stack or cover with a tarp that is secured to the bundle to create approximately a 100 lb mass; if only a few sheets are present move into a protected area or secure the sheets to something substantial; securing of sheet material can also be accomplished by placing weighted material on top of the bundle (i.e.- wooden pallets or heavy plate steel placed on light weight metal) or by clamping two corners of the material together.

5. *EZ Go/Gator work vehicles* - these units have work beds that carry light weight material (i.e.-straps, rope, bagged and tied off, etc.).

6. *Mobile/Gantry Cranes* - mobile cranes need to be in a lowered position with no load; gantry cranes need to be in a no load condition with hooks retracted up; large cranes need to have their booms in a lowered position anytime winds are expected to exceed 35 mph; doors on these units closed.

7. *Building Openings* - all site buildings should have roll-up and personnel doors closed to reduce the chances of debris impacting plant equipment; this includes turbine building hatches (roof access, turbine and heater deck equipment doors).

8. *General Site cleanliness or other issues* - loose materials such as cribbing/dunnage, welding blanket, trash, and loose flagging material on outside projects need to be picked up and disposed of; wheeled carts that can blow or move in high winds need to be secured to something substantial with ½ inch rope, chain or large tie wraps; ladders positioned for jobs outside-raised and secured or lowered and secured to something substantial with chain, rope or tie wraps.

9. *Building and yard drains* - building roofs (i.e., turbine building) should be inspected to ensure drains are not blocked and that flashing is intact around the drains; all yard drainage grating for the site should be inspected and any blockage removed to prevent flooding.

10. *Site compactor station* - any trash or debris should be compacted prior to the storm arrival. (At ANO this station located across from the outside fabrication shop has a hopper area that is open topped.)

11. *Outdoor tables/chairs* - light weight aluminum picnic tables, benches, chairs, etc. that are easily scooted or flipped in even moderate winds need to be chained or secured with ½ inch rope to a post, fence or other structure. Sites will use best judgment in securing site items.

    - **[For ANO only]**-The tables and chairs at the site cafeteria patio should be tacked against the outside wall of the cafeteria or if feasible moved indoors. It is not necessary to tie the table and chairs together. The chairs are mesh and have a low wind profile. When stacked they weigh well over 100 pounds and the tables are also a low wind profile and heavy.

      ANO Note: These same assumptions and standards apply to the GSB, Fire Brigade Training Area, Security Training Area, Training Center and outside warehouses/materials lay-down yards.

SEVERE WEATHER RECOVERY

Procedure Contains NMM REFLIB Forms: YES ☒ NO ☐

Effective Date	Procedure Owner: Title: Site:	Governance Owner: Title: Site:
05/27/2010	Nick Avrakotos Sr. Manager, EP Projects HQN	William Renz Director, Emergency Planning HQN

Exception Date*	Site	Site Procedure Champion	Title
	ANO	Robert Holeyfield	Manager, EP
N/A	BRP		
	GGNS	Christopher Lewis	Manager, EP
N/A	IPEC		
N/A	JAF		
N/A	PLP		
N/A	PNPS		
	RBS	Troy D Burnett	Manager, EP
N/A	VY		
	W3	Gregory Fey	Manager, EP
	NP		
	HQN	Myra Jones	Project Manager, EP

Site and NMM Procedures Canceled or Superseded By This Revision

Process Applicability Exclusion: All Sites: ☐

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC☐ JAF ☐ PLP ☐ PNPS☐ RBS ☒ VY ☐ W3 ☐

Change Statement

1. Added Attachment 9.6, Severe Weather Response and Recovery Critique Sheet and added instructions to complete a critique using the attachment in step 5.3.6.
2. Minor editorial change

*Requires justification for the exception

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1.0 PURPOSE

[1] This procedure provides guidance to Entergy personnel during recovery efforts associated with severe weather or other natural events. (i.e. ice storms, earthquakes, flooding).

[2] This procedure provides guidance on responding to site emergencies following the passage of natural disasters or area blackouts directly or indirectly affecting the site's 10-mile Emergency Planning Zone.

[3] This procedure does not supersede the requirements of any other plant procedure. It provides additional guidance specific to the requirements for confirming offsite emergency response capabilities following the passage of natural disasters.

[4] Site procedures may be used in lieu of this administrative procedure if the procedure provides site-specific details.

2.0 REFERENCES

[1] NRC Administrative Letter 97-03: Plant Restart Discussions Following Natural Disasters

[2] NRC Information Notice 93-53: Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned

[3] NRC Information Notice 93-53 Supplement 1: Effect of Hurricane Andrew on Turkey Point Nuclear Generating Station and Lessons Learned

[4] NRC Inspection Manual, Chapter 1601: Communication Protocol for Assessing Offsite Emergency Preparedness Following a Natural Disaster

[5] NRC Inspection Manual, Chapter 0305: Oversight of Operating Reactor Facilities in a Shutdown Condition with Performance Problems

[6] FEMA document: Post-Natural Disaster Assessment of Off-Site Preparedness Capabilities

[7] EN-EP-301, EP Assessment of Offsite Emergency Response Capability following a Natural Disaster.

[8] ENS-EP-302, Severe Weather Response

[9] EN-EP-605, Corporate Incident Response Team

3.0 DEFINITIONS

None

4.0 RESPONSIBILITIES

[1] The Site Vice President manages the day-to-day recovery operations at the site. He maintains communications with the Corporate Incident Response Director and the Chief Operations Officer (COO)

[2] The Corporate Incident Response Director (CIRD) is responsible for:

(a) The overall command and control of the procedural and requested support activities at the Corporate Incident Response Center (CIRC) during an Off-Normal Situation involving an Entergy facility where assistance is requested.

(b) Making notifications to Entergy senior management personnel to ensure they are aware of the event and provide any available status regarding the event.

(c) Establishing an organization to handle issues such as housing, pay, logistics, recovery, engineering, etc.

(d) Fulfilling requests from any of the sites upon notification of an Off-Normal Situation. These requests may include but not limited to the following:

- Return electrical service to the Nuclear site
- Clearing of roadways
- Obtaining food and supplies to support corporate and site recovery
- Obtaining heavy equipment, portable generators, and lighting
- Providing temporary living quarters to displaced employee families
- Providing and coordinating shared resources

[3] The Emergency Planning Manager (EPM) at each site, or designee, is responsible for:

(a) Making contact with offsite officials following the passage of a natural disaster or area blackout to determine their status and emergency response capability.

(b) Writing Condition Reports (CR) for any conditions that may need site action to correct. (i.e.: sirens not functional, offsite hotlines are not working, etc.).

(c) Performing the post event evaluation for restart EN-EP-301.

Section 4.0 cont

[4] Media Corporate Communications (MCC) should work with other company officials to develop formal statements and press information regarding the plant. All press releases will be processed through corporate communications. The Media Corporate Communications (MCC) acts as a buffer between the news media and those actively engaged in recovery activities.

[5] Licensing (Lic) is responsible for coordinating with site licensing personnel and supporting the site in interpretation of Technical Specifications, UFSAR, and other licensing documents.

[6] Engineering (Eng) provides technical support to the recovery operation. He/she will coordinate with Transmission and Distribution personnel to assign proper priority to return equipment critical to operation of the plant.

[7] Security (Sec) provides liaison with Local Law Enforcement Agencies and the site security organization to support recovery plan activities.

[8] Materials, Purchasing, and Contracts (MP&C) is responsible for coordinating with the sites relative to procurement of supplies, equipment and other resources necessary to address recovery actions.

[9] Emergency Planning Corporate Project Manager (EP) will coordinate CEC and Incident response activities. He/she will interface with site EP Management and assist with the Post Natural Disaster Off-Site Agency Capability Review.

[10] CEC Manager will staff the CEC and coordinate activities until the CIRT Director is assigned.

[11] Human Resources/Site Support (HR/SS) will interface with site management and coordinate addressing the needs of employees and their families that have been affected by plant events. He/she addresses hotel and housing needs, rental vehicles, etc., and secures professional services to address emotional/psychological concerns resulting from the event. He/She will coordinate setup of temporary living quarters for site personnel. He/She will interface with local government agencies to facilitate setup of temporary housing.

[12] Business Services (Bus) makes assessments regarding the extent and duration of financial needs. He/she coordinates shared resources that are needed to support Transmission and Distribution.

[13] The Shared Resources Coordinator will ensure plant needs are met by coordinating resources from other sites.

[14] Echelon Engineering (Eng) will coordinate priority return of power to essential plant equipment. (i.e. Sirens, EOF)

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

[1] Ensure ENS-DC-199 design requirements are met before advising the site of power availability and that the site operations crew understands the requirements and status prior to making an operability determination. Also refer to ENS-DC-201. [CR-HQN-2008-00762.

5.2 GENERAL DETAILS - OFF-SITE

[1] The CEC will initially manage storm recovery until the Corporate Incident Response Team (CIRT) is established. Once the CIRT is established the CEC Manager will report to the CIRT Director.

[2] The Corporate Incident Recovery Team will be established to protect and recover the company's investment and ensure that the affected plant is maintained in a safe condition.

[3] The Chief Operations Officer (COO), Site Vice Presidents, Plant General Managers, and other management positions may activate recovery positions and/or change the recovery team as they deem necessary to best support recovery efforts.

[4] **Attachment 9.1** provides guidance and instructions for key Corporate Incident Recovery Team personnel and the actions that may be necessary in restoring the plant back to operational status.

[5] The CEC will coordinate the sites' request for shared resources.

[6] The Corporate Incident Response Director (CIRD) will evaluate relocation of the CEC facility using **Attachment 9.3** if hazardous conditions make the CEC facility unsafe or if resources needed to operate the CEC are not available.

5.3 GENERAL DETAILS - ON-SITE

[1] Once the hazard potential has passed, steps must be taken to recover from the incident. All actions should be pre-planned in order to limit personnel exposure to hazardous conditions.

[2] The Site Recovery Lead has the responsibility for determining when it is appropriate to enter into the recovery phase.

[3] At the time of initiating **Attachment 9.2** activities to enter the recovery phase, the Site Recovery Lead will be responsible for informing all applicable agencies (e.g., federal, state, and local) that on-site conditions have stabilized and activities for recovery from the incident may begin.

Section 5.3 cont'd

[4] Request for shared resources will be made to the CEC using **Attachment 9.4** or similar form.

[5] When severe weather conditions have passed, perform site walk-downs using the instructions in **Attachment 9.5**.

[6] Before disbanding the command center or emergency response facility, the facility members or site team are responsible to use **Attachment 9.6** or similar document to critique the response and recovery actions and to capture lessons learned and enhancements. Consider PCRS to track identified corrective actions.

6.0 INTERFACES

None

7.0 RECORDS

[1] The checklists used are maintained in EP files for information only.

8.0 SITE SPECIFIC COMMITMENTS

Step	Site	Document	Commitment Number or Reference
[1]			None
[2]			

9.0 ATTACHMENTS

9.1 SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST
9.2 SEVERE WEATHER SITE RECOVERY CHECKLIST
9.3 CIRC/CEC RELOCATION CHECKLIST
9.4 SHARED RESOURCE REQUEST
9.5 POST STORM SITE WALK-DOWN INSTRUCTIONS
9.6 SEVERE WEATHER RESPONSE AND RECOVERY CRITIQUE SHEET

ATTACHMENT 9.1 SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST

Sheet 1 of 6

Note

The implementation of this Checklist is the discretion of the Corporate Incident Response Team Director, Echelon Duty Manager, or designee. He may implement this checklist in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, applicability, storm severity, existing outside conditions, plant status, site accessibility, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated.

Group responsible is suggested only. The task assignment may vary from response to response. Steps may be signed by someone knowledgeable (Corporate Incident Response Director, Duty Mgr., Lead, etc.) that the task was completed. This form or a similar form may be used.

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
1. When the National Weather Service indicates that the Severe Weather has passed or is no longer a threat to the site initiate recovery actions as appropriate.	(CIRD)	____/ ____/ ____
2. Establish communication with site leads and reliable external communications with sites.	(CIRD)	____/ ____/ ____
3. Evaluate staffing needs with the Site Vice President and consider relief of non-essential personnel to address personal needs. If recovery will last longer than 7 days, consider development of a plan to relieve Site Management personnel and Corporate Incident Response personnel.	(CIRD)	____/ ____/ ____
4. Determine shared resource needs. Track shared resources and ensure that only multi-site badge personnel with desired qualifications are dispatched. Ensure that these personnel arrive with bedding, food, and water as needed. (See Attachment 9.4)	(Shared Resource Coord.)	____/ ____/ ____
5. Evaluate use of Emergency Response Facilities with the Site Vice President to support public information or other needs.	(CIRD)	____/ ____/ ____
6. Consider establishing a staging location for employees returning to the site following the storm.	(CIRD)	____/ ____/ ____
7. Establish process for information flow from employee family members and employees sequestered at the site.	(CEC Mgr)	____/ ____/ ____
8. Evaluate need and re-locate additional resources to the facility, as applicable, to provide more efficient response to recovery actions.	(CIRD)	____/ ____/ ____

ATTACHMENT 9.1 **SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST**

Sheet 2 of 6

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
9. Establish policies for coping with the particular emergency, as necessary.	(CIRD)	____/ ____/ ____
10. Provide executive level interface on financial concerns through the designated Company Financial Representative.	(CIRD)	____/ ____/ ____
11. Establish and disseminate a cost center tracking/account number to track storm related costs.	(Bus Services)	____/ ____/ ____
12. Establish 24 hour coverage for necessary recovery positions.	(CIRD)	____/ ____/ ____
13. Brief Corporate Management personnel on status of recovery efforts.	(CIRD)	____/ ____/ ____
14. Evaluate need to provide meals and refreshments to personnel supporting incident response. Coordinate through Echelon cafeteria or Power House.	(CEC Mgr)	____/ ____/ ____
15. Work with site and determine need for: a. Road clearing b. Transport of Food	(CIRD)	____/ ____/ ____
16. Work with site to determine areas of the facility without Power. Discuss with T&D and prioritize Power restoration to site. Ensure ENS-DC-199 design requirements are met before advising the site of power availability and that the site operations crew understand the requirements and status prior to making an operability determination. Also refer to ENS-DC-201. [CR-HQN-2008-00762]	(Eng)	____/ ____/ ____
17. Contact Local Law Enforcement Agencies (LLEA) to coordinate traffic control and authorization for employee vehicles.	(Sec)	____/ ____/ ____
18. Evaluate need to supply security personnel with off-site work groups. (i.e. siren inspection)	(Sec)	____/ ____/ ____
19. Evaluate need to provide offsite security support to site. (i.e. National Guard, State or Local Police, Contract Security)	(Sec)	____/ ____/ ____
20. Evaluate need for Security Presence at Echelon and Power House.	(Sec)	____/ ____/ ____

ATTACHMENT 9.1 **SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST**

Sheet 3 of 6

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
21. Evaluate need to arrange for helicopter support to bring personnel and equipment to the site after passage of the storm, if necessary. Contact Aerial Patrol 501-352-3862.	(CEC Mgr)	____/ _____/_____
22. Evaluate need for media relations.	(MCC)	____/ _____/_____
23. Perform accountability of evacuated employees and critical contractors. Identify locations and status of employees and family members. Also get cell phone and land line contact numbers.	(HR/SS)	____/ _____/_____
24. Provide support for locating missing family members.	(HR/SS)	____/ _____/_____
25. Evaluate need to establish a standard pay policy for plant workers, response team, relief team, and storm workers both exempt and non-exempt.	(HR/SS)	____/ _____/_____
26. Coordinate special equipment and crews for access road cleaning, initial debris removal and prompt restoration of water supply, communications, etc. as requested by sites. Coordinate with system command center at Power House for resources.	(CEC Mgr)	____/ _____/_____
27. Coordinate truck driver support to obtain necessary Foodstuffs and water to sustain response personnel onsite during and after the storm as requested by sites. Coordinate with System Command Center at Power House.	(CEC Mgr)	____/ _____/_____
28. Verify sites have implemented EP-301 Confirmation of offsite Emergency response Capability following a Natural Disaster. (i.e. facilities, Organization, Communication capabilities, Evacuation routes, and public alert/notification capabilities).	(CEC Mgr)	____/ _____/_____

ATTACHMENT 9.1 SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST

Sheet 4 of 6

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
29. Evaluate need for employee assistance with emergency shelter, temporary housing, and home restoration. Assist families in the following areas: a. Relocation of families if displaced by evacuation b. Accommodations for relief personnel off-duty c. Emotional Support d. Financial Support e. Home repair f. Rental cars	(HR/SS)	____/_____/ _____
30. Evaluate the need for assisting with family issues: a. supplies and transportation b. assistance in locating missing persons c. assistance with home repairs, moving, and storage d. Financial/Insurance counseling and assistance e. Day Care Centers for child care to support personnel return to work f. Return to work plan	(HR/SS)	____/_____/ _____
31. Determine need to establish HR family hotline.	(HR/SS)	____/_____/ _____
32. Periodically obtain information such as status of roads, evacuation orders still in place along return routes, evacuation orders lifted and curfew status for employees and families returning to the area. Update Emergency Information Hotline and provide the information to staff answering calls from employees on the CEC line.	(CEC Mgr)	____/_____/ _____
33. Develop a relationship with local FEMA representatives to help facilitate housing for responding resources and returning resources.	(HR/SS)	____/_____/ _____
34. Contact US Department of Homeland Security, State Department of Economic Development, Local planning and Zoning Department, Local Protective Security Advisor to facilitate communications with other government agencies and FEMA	(HR/SS)	____/_____/ _____
35. Establish a standard protocol for trailers to be set up at the site. Use trailers to get people out of plant and office sleeping arrangements to a more restful environment.	(HR/SS)	____/_____/ _____

ATTACHMENT 9.1 **SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST**

Sheet 5 of 6

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
36. Evaluate the need to set up additional trailers for families moving back into the area to maintain and stabilize the workforce.	(HR/SS)	____/____/ ____
37. Consider establishing a standard hotel reservation for responding shared resources.	(Bus Service)	____/____/ ____
38. Evaluate support needed to resolve FEMA restart issues and coordinate response to EN-EP-301 "EP Assessment of Offsite Capability Following a Natural Disaster".	(EP)	____/____/ ____
39. Determine EP resources needed to support recovery efforts and obtain those resources internally from sites not affected by the event or through sites external to Entergy. These resources may be able to support from their home site without relocation.	(CEC Mgr)	____/____/ ____
40. Evaluate the need for amphibious equipment, or other high water vehicles.	(CIRD)	____/____/ ____
41. If power is lost to the Echelon building, evaluate the need to have diesel fuel delivered in bulk. The diesel tank to the building has a capacity of 90 gallons which will operate the diesel 8 to 12 hours.	(CEC Mgr)	____/____/ ____
42. If the CEC and HVAC for fourth floor computers are being powered from the emergency generator(s), ensure personnel are assigned to periodically monitor operation and refuel when necessary.	(CEC Mgr)	____/____/ ____
43. If the general service area is without power, there may be a shortage of gasoline for emergency workers, evaluate the need to have gasoline delivered to Echelon in bulk.	(CEC Mgr)	____/____/ ____
44. If the CIRC/CEC becomes uninhabitable relocate facility to alternate location and complete **Attachment 9.3**.	(CEC Mgr)	____/____/ ____

ATTACHMENT 9.1 SEVERE WEATHER CORPORATE INCIDENT RESPONSE TEAM RECOVERY CHECKLIST

Sheet 6 of 6

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
45. Coordinate additional emergency resources assistance with the Institute of Nuclear Power Operations (INPO)	(CEC Mgr)	____/ ____/ ____
46. Purchase services and emergency supplies (i.e. foodstuffs, water, bedding, linen, personal hygiene, first aid, gasoline, diesel fuel) as needed.	(MP&C)	____/ ____/ ____
47. Evaluate need to obtain rental diesel generators to power non-safety related loads.	(MP&C)	____/ ____/ ____
48. Work with affected site on any deviations requiring NRC discretionary enforcement.	(Lic)	____/ ____/ ____
49. Test satellite, cell phones, land lines, and Nextel phones to verify operability. Coordinate with Telecommunications to verify operability of all normal and backup communications equipment.	(CEC Mgr)	____/ ____/ ____
50. If hazardous conditions impact employee travel locally, consider sequestering CEC staff until the hazard is clear. • Ensure adequate bedding supplies are available to support Corporate Incident Response personnel and support staff. • Designate suitable sleeping areas and set-up bedding material, if needed. • When no longer needed, Return bedding and supplies to storage	(CEC Mgr)	____/ ____/ ____
51. When CEC operations are secured, return facility to standby status and replenish supplies.	(CEC Mgr)	____/ ____/ ____
52. Completed checklist and log books are to be forwarded to CEC Mgr.	(CEC Mgr)	____/ ____/ ____

ATTACHMENT 9.2 — SEVERE WEATHER SITE RECOVERY CHECKLIST

Sheet 1 of 5

Note

The implementation of this Checklist is the discretion of the Site VP, GMPO, Duty Manager, or designee. He may implement this checklist in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, applicability, storm severity, existing outside conditions, plant status, site accessibility, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated.

Group responsible is suggested only. The task assignment may vary from site to site. Steps may be signed by someone knowledgeable (Duty EP, Duty Mgr., GMPO, etc.) that the task was completed. This form or a similar form may be used.

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
Recovery and Plant Restart		
1. When the National Weather Service indicates that the Severe Weather has passed or is no longer a threat to the site, inform the Control Room and ensure Severe Weather response team personnel are relieved as soon as practical.	(GM)	____/____/____
2. Perform comprehensive radiological surveys of the site. Determine if a radiological release has occurred and the magnitude of the release. Radiological surveys of outside areas may be required prior to granting full access to the protected area. Post or re-post radiation and contamination area boundaries as necessary.	(HP)	____/____/____
3. Dispatch teams as soon as possible following storm passage to search for missing personnel and provide aid to trapped or injured personnel as necessary.	(GM)	____/____/____
4. Inventory and account for all radiological waste and radioactive sources on-site.	(HP)	____/____/____
5. Restore site security and safeguards (if previously suspended)	(Sec)	____/____/____
6. Re-establish fire protection, including the outside fire protection systems, as soon as the situation has been evaluated and conditions allow. Remove, rope off, or otherwise resolve unsafe conditions in and around the site.	(GM)	____/____/____
7. Update Emergency Information Line when event is over.	(EP)	____/____/____

ATTACHMENT 9.2 — SEVERE WEATHER SITE RECOVERY CHECKLIST

Sheet 2 of 5

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
8. If recovery will last longer than 7 days, consider development of a plan to relieve plant workers.	(GM)	____/ ____/ ____
9. Arrange for relief of plant personnel utilizing alternate personnel or shared resource personnel from other sites, to allow for personal and family needs to be addressed.	(GM)	____/ ____/ ____
10. Designate personnel to coordinate plant restart efforts for both onsite and offsite issues. Offsite coordinators work with State, Parish/County, FEMA and NRC personnel in accordance with NRC Administrative Letter 97-03 and NMM procedure EP 301.	(GM)	____/ ____/ ____
11. Develop contingency plans for water make-up to the site that will meet specifications.	(GM)	____/ ____/ ____
12. Designate personnel to staff teams for onsite, offsite and employee recovery efforts with a director or manager as the responsible lead for each team. Coordinate efforts with CEC/CIRC. Refer to Attachment 9.5 when teams are dispatched.	(GM)	____/ ____/ ____
13. Initiate appropriate clean-up and recovery efforts due to the Severe Weather.	(GM)	____/ ____/ ____
14. Remove unsafe industrial conditions such as exposed and energized power lines, unstable structures, broken glass, etc.	(Maint)	____/ ____/ ____
15. Observe water intake screens and have maintenance clean screens and filters if required.	(Ops)	____/ ____/ ____
16. Survey remaining plant outside structures for damage and take appropriate action; also remove any temporary covers or severe weather shielding of permanent plant equipment placed during storm preparations. (i.e. restoration of W3 CO_2 Compressors) Refer to Attachment 9.5	(Ops) (Maint)	____/ ____/ ____
17. Provide for information such as status of roads, evacuation orders still in place along return routes, evacuation orders lifted and curfew status for employees and families returning to the area. The CEC response Team members and telephone bank operators may need to stay in place long enough to provide this information even after a storm has passed with little damage.	(EP)	____/ ____/ ____

ATTACHMENT 9.2 — SEVERE WEATHER SITE RECOVERY CHECKLIST

Sheet 3 of 5

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
18. Perform checks of E-Plan components and document in accordance with EN-EP-301: a. ERDS b. ENS c. State/Local hotlines d. Plant Phones e. Plant Radios f. Met Tower g. Environmental Monitoring Stations h. Gaitronics i. Plant Alarms.	(EP)	____/ ____/ ____
19. Perform pager test to verify ERO can be contacted prior to releasing personnel from their sequestered role.	(EP)	____/ ____/ ____
20. Determine status of offsite sirens and document results in accordance with EN-EP-301.	(EP)	____/ ____/ ____
21. Review status of Letters of Agreements (LOAs) for possible impact on the ability to respond or otherwise meet the intent of the agreement.	(EP)	____/ ____/ ____
22. Ensure that minimum staffing capabilities and response times are maintained if personnel are evacuated.	(EP)	____/ ____/ ____
23. Verify operability of primary and alternate Emergency Facilities.	(EP)	____/ ____/ ____
24. Evaluate need for shared resources and request services through the CEC by completing Attachment 9.3	(GM)	____/ ____/ ____
25. Direct recovery team personnel to call the Severe Weather Hotline at pre-determined times for instructions on staging and activation of their recovery team.	(EP)	____/ ____/ ____
26. Consult with Echelon personnel on availability of helicopters for moving personnel and supplies to the site after storm passage, if necessary.	(EP)	____/ ____/ ____

ATTACHMENT 9.2 SEVERE WEATHER SITE RECOVERY CHECKLIST

Sheet 4 of 5

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
27. Provide truck driver support to obtain necessary foodstuffs and water to sustain response personnel onsite after the storm.	(Maint)	____/ ____/ ____
28. Remove sandbags.	(Maint)	____/ ____/ ____
29. Return staged material (i.e. oil, gas, pumps, hoses) to pre storm condition	(Maint)	____/ ____/ ____
30. Restore any security lighting that was removed prior to the storm.	(Maint) (Sec)	____/ ____/ ____
31. Ensure that materials that could create a transient combustible condition are monitored and removed following passage of the storm.	(Maint)	____/ ____/ ____
32. Perform electrical inspection of equipment which was exposed to the storm's environment prior to re-energizing. For electrical components wetted, by rain, have Electrical dry and megger the equipment, as necessary, and after successful meggering, energize any installed heaters.	(Maint)	____/ ____/ ____
33. If restoration of equipment is necessary for reactor safety, and time does not permit a full cleaning and inspection, station a watch in a safe location to report any abnormal operation.	(Maint)	____/ ____/ ____
34. Pump out manholes and other low-lying areas where water has collected.	(Maint)	____/ ____/ ____
35. Ensure all materials brought to the facility which could create a transient combustible condition are monitored and removed following passage of the storm.	(Maint)	____/ ____/ ____
36. Evaluate need to procure land service equipment, such as open top, drop frame, enclosed, and refrigerator trailers and tractors.	(EP) (Maint)	____/ ____/ ____
37. Evaluate need for procurement of temporary structures, such as mobile modular and Kelly buildings, laundry, shower and hygiene, portable toilets, and tents.	(EP) (Maint)	____/ ____/ ____
38. Evaluate need for procurement of post and chain link security fence equipment.	(EP) (Sec)	____/ ____/ ____

ATTACHMENT 9.2 — SEVERE WEATHER SITE RECOVERY CHECKLIST

Sheet 5 of 5

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A

Note
Waterford maintains a 7 day supply of diesel fuel for the Emergency Diesels. Consideration should be given to prioritizing the delivery of diesel fuel and/or establishing alternate paths of delivery. (Ex: Highway transportation may not be possible so consideration given to river transportation)

39. Evaluate need to procure additional fuel oil for plant and clean-up equipment. Consider method to expedite acceptance of fuel oil deliveries.	(Ops) (MP&C)	_____/ _____/ _____
40. Evaluate need to purchase the following: Food/Water Propane grills for on-site cooking. Rental cars for employee transportation Cellular phones for employee communication	(EP)	_____/ _____/ _____
41. Verify operability of radiological effluent monitors.	(HP)	_____/ _____/ _____
42. Verify status of meteorological instrumentation. Establish alternate means of obtaining meteorological data if some instruments are not functioning properly.	(Ops)	_____/ _____/ _____
43. Evaluate operability of instrumentation/equipment needed to support EALs.	(Ops)	_____/ _____/ _____
44. Notify NRC of recovery status.	(NSA)	_____/ _____/ _____
45. Emergency Preparedness personnel will ensure Emergency Facilities and inventories are returned to a ready status.	(EP)	_____/ _____/ _____
46. Completed checklist and log books are to be forwarded to Emergency Preparedness.	(All)	_____/ _____/ _____
47. Ensure that the NRC, State, Parishes or Counties are aware of the plant restart schedule well in advance.	(EP)	_____/ _____/ _____
48. Verify that the Federal Emergency Management Agency (FEMA) is aware of the plant restart schedule and that the Agency had not identified any concerns regarding restart.	(EP)	_____/ _____/ _____
49. Coordinate re-entry of personnel and equipment to the site with local law enforcement in the County/Parish EOCs.	(EP)	_____/ _____/ _____
50. Verify with Local Law Enforcement Agencies (LLEA) that they will recognize and accept Entergy identification badges.	(Sec)	_____/ _____/ _____

ATTACHMENT 9.3 — CIRC/CEC RELOCATION CHECKLIST

Sheet 1 of 1

Note

The implementation of this Checklist is the discretion of the Corporate Incident Response Team Director, Duty Manager, or designee. He may implement this checklist in total or only those steps that he deems appropriate. Any steps may be N/A depending on personnel safety, manpower, applicability, storm severity, existing outside conditions, plant status, site accessibility, etc. These steps may be completed in any order or performed simultaneously unless otherwise stated.

Group responsible is suggested only. The task assignment may vary from response to response. Steps may be signed by someone knowledgeable (Corporate Incident Response Director, Duty Mgr., Lead, etc.) that the task was completed. This form or a similar form may be used

ITEM	GROUP RESP	INITIALS / DATE Start/Complete/N/A
1. Notify White Plains CSC that they will manage CIRC/CEC duties until the CIRC/CEC has reestablished operation at ANO, White Plains, or other alternate site.	(CIRD)	____/ ____/ ____
2. Notify sites of need to relocate CIRC and provide in transit cell phone numbers and White Plains phone numbers.	(CEC Mgr)	____/ ____/ ____
3.		
4. Notify CIRC/CEC relief shift of the facility relocation.	(CEC Mgr)	____/ ____/ ____
5. Obtain a copy of CIRC/CEC Procedures to move to alternate CIRC.	(CEC Mgr)	____/ ____/ ____
6. Obtain copy of site reference material. (i.e. Site E-plans, State plans, Evacuation time studies)	(CEC Mgr)	____/ ____/ ____
7. Obtain cellular Nextel phones.	(CEC Mgr)	____/ ____/ ____
8. Obtain portable Satellite phone from CEC.	(CEC Mgr)	____/ ____/ ____
9. Obtain Siren and road maps from CEC.	(CEC Mgr)	____/ ____/ ____
10. Obtain CEC phone directories and other resource materials.	(CEC Mgr)	____/ ____/ ____
11. Set up computers, satellite phone and other equipment as necessary to make CIRC/CEC operational.	(CEC Mgr)	____/ ____/ ____
12. Notify Sites and White Plains CSC that CIRC/CEC has reestablished operation and provide new phone numbers.	(CIRD)	____/ ____/ ____

SHARED RESOURCES REQUEST

Requesting Site: _____

Item No.	Total Needed	Discipline Required (i.e. Elec, Mech, I&C, RP, ENG, Planner)	Skill Set Needed (i.e. MOV, D/G)	Date Needed	Qualification Records Needed (i.e, respirator, RW, specific systems or components, multi site badge)	Number of days needed

Approval: _____ **Date:** _____
(Site VP, GMPO, or Designee)

Note: Send copy to CEC (electronic or FAX)

[1] General

(a) Post-storm site walk-downs can begin when it has been determined by the hurricane Command Center Lead, or TSC Lead if in a declared emergency, that severe weather conditions have passed and that it is safe to leave the nuclear island. Team assignment/coordination and communications should be lead by the Command Center Lead or by the OSC or TSC per procedures if in a declared emergency. In general, conditions that would allow personnel to leave the nuclear island include:

- Precipitation has stopped
- Winds are less than 15 miles per hour sustained
- There is no forecast for a return to severe wind or precipitation conditions.

(b) Initial damage assessment activities must be done in teams composed of not less than 2 persons and should consider having at least one electrician and one RP.

- Full personal protective equipment including safety glasses, safety footwear or boots and gloves must be worn by team members.
- The team(s) should have a designated inspection area and route.
- The team must have a method (cell phone or radio programmed to maintenance frequency) for communicating back to the hurricane command center. A callback frequency should be established.
- The team must have a flashlight or other portable lighting device if they are required to enter buildings that are without regular power supply.

(c) Video surveillance should be used for initial damage assessment to the degree possible.

[2] General Guidance for All Areas

(a) While in transit to any location, teams should determine if there are any downed power lines of light poles which pose an electrical shock hazard. If these hazards exist, they should be flagged or posted as hazardous.

(b) The stability of any debris found on site should be questioned. If suspended debris is sighted, personnel are cautioned to stay clear of the debris and to consider it hazardous. Flagging or barricades should be established to warn other personnel of this situation.

(c) Any animals or insects encountered during initial walk-down should be considered as dangerous and should be avoided.

(d) Teams conducting initial site walk-downs are reminded that their primary mission is to gather and report information. Teams are not to become involved with repair activities that are not related to their primary information gathering mission.

(e) Team members are expected to record and communicate challenges encountered. Clearing can be conducted when it is determined to be safe. Questions concerning the safety of clearing activities should be referred to the Command Center Lead or OSC Lead if in a declared emergency.

[3] Guidance for Building Inspections

(a) Prior to entering a building, assess physical and visual conditions to assure that access to the building is not challenged.

(b) Determine if electrical power is available to the building.

- **IF** electrical is not available, **THEN** record and report the loss of power supply.
- Do **NOT** attempt to restore power supply.

(c) If windows or doors are broken, determine if water damage has occurred.

- If water damage has occurred, determine if there should be physical restrictions to access.
- If a hazard is determined to exist, establish flagging or barricades to limit access.

[4] Guidance for Service Structure Inspections

(a) Prior to entering a building, assess physical and visual conditions to assure that access to the structure is not challenged.

(b) Determine if electrical power is available to the building.

- **IF** electrical is not available, **THEN** record and report the loss of power supply.
- Do **NOT** attempt to restore power supply.

(c) For Intake Structure inspections, observe area for reptiles or other wild animals. Take precautions to prevent hazardous situations.

(d) Determine operable condition of the equipment in the structure.

- Record damage to facilitate repair and restoration activities. Pictures should be taken when possible.

[5] Guidance for Physical Security Inspections

(a) Determine if debris has damaged fencing or surveillance materials

- Determine contingency effort required while repairs are conducted.
- Do **NOT** attempt to remove debris without team assessment.

(b) Determine if any razor wire has broken loose and may pose a hazard to personnel.

- Flag or barricade areas to prevent risk to personnel.
- Do **NOT** attempt to handle as severe personal injury could result.

ATTACHMENT 9.6 TYPICAL SEVERE WEATHER RESPONSE AND RECOVERY CRITIQUE SHEET

Sheet 1 of 1

NOTE
Please provide comments under the Objective that most closely fits.

This form may be reproduced for use.

Severe Weather Response and Recovery Critique Sheet	
Objective	Demonstrate the ability to respond to and recover from a severe weather event with a high focus on industrial and personal safety.
Comments	
Objective	Demonstrate the ability to use effective communications systems and equipment which support a response to and recovery from a severe weather event.
Comments	
Objective	Demonstrate the ability of response facilities and equipment to support a response to and recovery from a severe weather event.
Comments	
Objective	Demonstrate the ability of logistics processes to support a response to and recovery from a severe weather event.
Comments	
Objective	Provide any miscellaneous comments here.
Comments	

Title: **Storm Center Interface**

Procedure Owner:	**Curtley Hayes / Corp EP Project Manager**	
	(Print Name / Title)	
Approved:	Curtley Hayes	5/4/06
	(Procedure Owner Signature)	(Date)

Effective Date	**EN Common**	☐		**Effective Date Exception**	**ANO**	**N/A**	**PNPS**	**N/A**
	ENN	☐			**ECH**		**RBS**	**N/A**
	ENS	☒	5/10/06		**GGNS**	**N/A**	**VY**	**N/A**
					IPEC	**N/A**	**W3**	**N/A**
					JAF	**N/A**	**WPO**	**N/A**

Basis Statement

This is a new procedure to define the interface process with Transmission and Distribution.

Procedures Affected By This Revision

None

Process Applicability Exclusion (ENN-LI-100) / Programmatic Exclusion (ENS-LI-101)

All Sites: ☐ Specific Sites: ANO ☐ GGNS ☐ IPEC ☐ JAF ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐

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1.0 PURPOSE

[1] This procedure provides guidance to the Nuclear Corporate Incident Response Team relative to interface with the Entergy Storm Center.

2.0 REFERENCES

[1] EN-EP-605, Corporate Incident Response Team

[2] EN-PL-145, Notification of Off-Normal Situations

3.0 DEFINITIONS

[1] Nuclear Corporate Incident Response Center (CIRC) – Any location designated as the corporate command room. This may be the CEC and adjoining conference rooms located at Echelon, the CSC located at White Plains, or any alternate facility that has access to computers and phone communications.

[2] ENS Corporate Emergency Center (CEC) – a facility located on the 1st Floor of the Echelon Building located at 1340 Echelon Parkway Jackson, MS. This facility is designated to provide support as needed to any of the Entergy unit that has an Off-Normal Situation. Support will be provided as requested to secure personnel, logistics and communication activity from outside of the affected unit.

[3] Nuclear Corporate Incident Response Team (CIRT) – Experienced personnel assigned from various departments to support the Corporate Incident Response Center Director during Off-Normal Situations. This support staff will answer phones, coordinate activities between sites and perform other duties as assigned. Once assigned to the Corporate Incident Response Team, an individual's primary duty is to support the response effort.

[4] Off-Normal Situation – Any event at an Entergy site that may require support or a coordinated effort from Headquarters. Examples include but are not limited to severe weather, union strikes, blackout events, grid failures, plant outages, major equipment failures, flu pandemic.

[5] Nuclear Corporate Duty Manager – A senior management person in the headquarters office assigned to be a liaison with the Entergy Plants and the Chief Operating Officer regarding designated plant events or conditions. The Nuclear Corporate Incident Response Director will take over the Nuclear Corporate Duty Manager duties when the Nuclear Corporate Incident Response Team is appointed by the COO.

4.0 RESPONSIBILITIES

[1] The Nuclear Corporate Incident Response Director is responsible for:

(a) The overall command and control of the procedural and requested support activities at the nuclear Corporate Incident Response Center (CIRC) during an Off-Normal Situation involving an Entergy facility where assistance is requested.

(b) Fulfilling requests from any of the sites upon notification of an Off-Normal Situation. These request may include but not limited to the following:

- Restore electrical service to the Nuclear site. (e.g. critical facilities such as EOF, etc).
- Restoration of preferred offsite power sources.
- Clearing of roadways.
- Obtaining food and supplies to support corporate and site recovery.
- Obtaining heavy equipment, portable generators, and lighting.
- Providing temporary living quarters to displaced employee families.
- Providing and coordinating shared resources.

[2] Engineering provides technical support to the recovery operation. Engineering will coordinate with Transmission and Distribution personnel to assign proper priority for restoration of electrical service to equipment critical to operation of the plant and preferred offsite power sources.

[3] CEC Manager will coordinate request for roadway clearing, transportation needs, and special equipment needs with the Entergy Storm Boss located at the Power House.

[4] Entergy Nuclear South Corporate Security is responsible for

(a) Coordinating security needs with the Entergy Storm Boss at the Power House.

5.0 DETAILS

5.1 PRECAUTIONS AND LIMITATIONS

None

5.2 GENERAL DETAILS

[1] Request for special needs (i.e. security, transportation, roadway clearing, special equipment needs, and priority electrical restoration) should be coordinated with the Entergy Storm Boss and documented on Attachment 9.1.

[2] Each request should be in writing and will have a sequential Corporate Incident Response Request (CIRR) number assigned for tracking purposes. (i.e. CIRR 2006-001)

[3] A log should be maintained with sequential numbers and a description of the request.

[4] A copy of the request should be maintained for the duration of the event.

6.0 INTERFACES

None

7.0 RECORDS

All documents generated including logs, reports, and forms completed during this event are to be assembled and maintained for the duration of the event.

8.0 OBLIGATION AND REGULATORY COMMITMENT CROSS-REFERENCES

Document	Document Section	NMM Procedure Section	Site Applicability
None			

9.0 ATTACHMENTS

9.1 Nuclear Support CIRT Request Form

Sheet 1 of 1

Nuclear Corporate Incident Response Team Support Request

Request Number: _____

System Command Center Contact:_____

Support Needed:

_____ **Transportation**

Details: _____

_____

_____

(Type, capacity, date needed, etc.)

_____ **Electrical Service Restored**

Details: _____

_____

_____

(Specific Load Center, line, siren, Substaion, etc)

_____ **Road Clearing**

Details: _____

_____

_____

(Specific Road, Location, area, etc)

_____ **Other**

Details: _____

_____

_____

_____

_____

(Date, time, location, size, capacity, etc.)

Need Date: _____

Priority: _____

_____

Approved: Corporate Incident Response Director or Designee

CIRC Contact: _____ Phone Number:_____

Attachments: Yes ____ No ____

Entergy	NUCLEAR MANAGEMENT MANUAL	NON-QUALITY RELATED	EN-OM-123	REV. 3
		INFORMATIONAL USE	PAGE 1 OF 61	

Fatigue Management Program

Procedure Contains NMM REFLIB Forms: YES ☒ NO ☐

Effective Date	Procedure Owner: Title: Site:	John McCann VP, Nuclear Safety, EP, and Licensing HQN / WPO	Governance Owner: Title: Site:	John McCann VP, Nuclear Safety, EP, and Licensing HQN / WPO
9/28/10				

Exception Date*	Site	Site Procedure Champion	Title
	ANO	Brad Berryman	Gen Mgr, Plant Ops
N/A	BRP		
	GGNS	Jeremy Browning	Gen Mgr, Plant Ops
	IPEC	Anthony Vitale	Gen Mgr, Plant Ops
10/18/10	JAF	Brian Sullivan	Gen Mgr, Plant Ops
11/17/10	PLP	Thomas Kirwin	Gen Mgr, Plant Ops
	PNPS	Robert Smith	Gen Mgr, Plant Ops
	RBS	Eric Olson	Gen Mgr, Plant Ops
	VY	Christopher Wamser	Gen Mgr, Plant Ops
	W3	Charles Arnone	Gen Mgr, Plant Ops
N/A	NP		
	HQN	John Dent	GMPO, Fleet Ops Support

Site and NMM Procedures Canceled or Superseded By This Revision None

Process Applicability Exclusion: All Sites: ☒

Specific Sites: ANO ☐ BRP ☐ GGNS ☐ IPEC ☐ JAF ☐ PLP ☐ PNPS ☐ RBS ☐ VY ☐ W3 ☐

Change Statement

Revised to address items from corrective actions, internal audit / assessment results, and user feedback.

- Added references 2.11 and 2.12 (Entergy System Policies) per Entergy Risk Assessment (RA) Audit
- Added 'watchperson' to definition 3.0 [9] (e) per CR-HQN-2009-1019
- Reworded definition 3.0 [16] 'Incidental duties per CR-HQN-2009-1094
- Addressed predictive maintenance in definition 3.0 [18]
- Removed 'IPTE' as an element of Risk-Informed Evaluation Process definition 3.0 [24]
- Removed requirement for an annual fleet-level review (4.1 and 5.10)
- Removed requirement for GMPO (4.3) to designate site PoC. [CR-HQN-2010-843]
- Submittal of FFD Annual Report changed from corporate to site-level responsibility (4.4, 4.10, 5.12[1])
- Title revised per organization change in Licensing (4.4)
- Updated responsibilities for Watchbill Coordinators (4.14) and eSOMS Administrators (4.15)
- Resolved conflicting steps regarding PQ&S vs ESTER data per Entergy RA Audit (5.4 [4])
- Added new step for a PQ&S system outage per Entergy RA Audit (5.4 [5])
- Added overview of response to an emergent condition (5.5 [6] and Attachment 9.8)
- Reinforced applicability of Fatigue Assessment to non-covered workers (5.7 Note)
- Clarified Fatigue Assess training requirement (5.7[6] Note)
- Added language regarding 'potential for fatigue-related degradation' per RA Audit (5.7 [6] (b))
- Expanded 5.9 Note regarding Waivers per CR-WF3-2010-4136 [waiver for each work day / shift]
- Added new Attachment for annual report template (5.10 and Attachment 9.7)
- Clarified Forms; Attachments 9.1 and 9.2 per user feedback.
- Various non-intent changes and editorial changes throughout

*Requires justification for the exception: JAF and PLP Effective Date exceptions due to RFOs

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1.0 PURPOSE

[1] This procedure establishes the administrative controls for fatigue management, as required by 10 CFR 26 Subpart I, and includes the following:

- Entergy's policy for the management of fatigue for all individuals who are subject to the Fitness for Duty Program described in EN-NS-102;
- Method for implementing work hour controls for Covered Individuals;
- Limitations and processes for granting waivers and exceptions of work hour controls;
- Processes and requirements regarding fatigue assessments, and;
- Program provisions for training, recordkeeping, reporting, periodic reviews and audits.

[2] Fatigue management is one of several aspects of the Fitness-for-Duty program (Reference 2.0 [4]). The Fitness-for-Duty program, including fatigue management concepts apply to:

- All persons who are granted unescorted access to an Entergy protected area, and,
- All persons who are required to physically report to an Entergy Technical Support Center (TSC) or Emergency Operations Facility (EOF) by Entergy site-specific Emergency Plan.

[3] Fatigue management concepts include:

- Knowledge of contributors to worker fatigue,
- Ability to identify symptoms of worker fatigue, and
- Responsibility to report to work fit for duty as described in the Fitness-for-Duty Program, including being adequately rested to preclude decreased alertness.

[4] Fatigue management concepts AND the following additional requirements apply to those members of the FFD population (including Entergy employees and contractor / vendor personnel) who are also identified as Covered Individuals:

- Specific Work Hour Controls (work hour ceilings, minimum break times, and minimum days off)
- Waivers and exceptions to the Work Hour Controls

[5] The potential for excessive fatigue is not solely based on actual hours worked but can result from other factors, such as:

(a) stressful working conditions

(b) sleep disorders

(c) accumulation of sleep debt

(d) disruptions of circadian rhythms associated with shift work

[6] Behavioral observation is also an aspect of the Fitness-for Duty program and includes observations related to drugs, alcohol, and fatigue. Actions in response to a suspected impaired condition must be in accordance with that program; Reference 2.0 [4].

2.0 REFERENCES

[1] 10 CFR Part 26 Subpart I, "Managing Fatigue"

[2] NEI 06-11, "Managing Personnel Fatigue at Nuclear Power Reactor Sites", Revision 1, October 2008

[3] Regulatory Guide 5.73, "Fatigue Management for Nuclear Power Plant Personnel", March 2009

[4] EN-NS-102, "Fitness for Duty Program"

[5] EN-OM-123-02, "Working Hour Limits eSOMS Users Guide"

[6] ENN-HR-130, "Shared Resource Assignment"

[7] ENS-HR-130, "Entergy Shared Resources"

[8] EN-WM-104, "On Line Risk Assessment"

[9] EN-OU-108, "Shutdown Safety Management Program"

[10] EN-QV-109, "Audit Process"

[11] Entergy System Policy; "Discipline"

[12] Entergy System Policy; "Attendance and Absenteeism"

3.0 DEFINITIONS

[1] Acute Fatigue - Fatigue from causes (e.g. restricted sleep, sustained wakefulness, task demands) occurring within the past 24 hours.

[2] Alertness - The ability to remain awake and sustain attention.

[3] Break - An interval of time that falls between successive work periods, during which the covered individual does not perform duties for Entergy, other than one period of shift turnover at either the beginning or end of a shift, but not both. This means that one period of shift turnover can count towards the required break time.

[4] Call-in - Returning to the site when not normally scheduled for work.

[5] Circadian variation in alertness and performance - The increases and decreases in alertness and cognitive/motor functioning caused by human physiological processes (e.g. body temperature, release of hormones) that vary on an approximately 24-hour cycle.

[6] Condition Adverse to Safety or Security - Situations in which a licensee-approved waiver of work hour controls is permitted. This includes, but is not limited to, being able to comply with other NRC regulations, recovering equipment necessary for plant safety or security, preventing a forced plant shutdown or power reduction, and preventing a condition adverse to industrial or environmental safety.

[7] Contractor/Vendor (C/V) - An individual, not employed by Entergy, who is providing work or services to Entergy, either by contract, purchase order, oral agreement, or other arrangement.

[8] Covered Individual (or Covered Worker) - An individual subject to work hour controls. Any individual, granted unescorted access to an Entergy protected area, who performs covered work.

[9] Covered Work – Includes the following:

(a) Operating or on-site directing the operation of systems and components that a risk-informed evaluation process has shown to be significant to public health and safety;

(b) Performing maintenance or on-site directing the maintenance of structures, systems, and components (SSCs) that a risk-informed evaluation process has shown to be significant to public health and safety;

(c) Performing Radiation Protection or Chemistry duties required as a member of the on-site emergency response organization minimum shift complement, as described in the site-specific Emergency Plan;

(d) Performing the duties of a Fire Brigade member who is responsible for understanding the effects of fire and fire suppressants on safe shutdown capability; and

(e) Performing security duties as an armed security force officer, alarm station operator, response team leader, or watchperson.

[10] Cumulative fatigue - The increase in fatigue over consecutive sleep-wake periods resulting from inadequate rest.

[11] Day-off - A calendar day (0000 – 2400) in which an individual does not start a work shift.

[12] Directing - The exercise of control over a work activity by an individual who is directly involved in the execution of the work activity and either makes technical decisions for that activity without subsequent technical review, or is ultimately responsible for the correct performance of that work activity.

[13] Eight (8)-hour shift schedule - A schedule that averages not more than 9 hours per workday over the entire shift cycle.

[14] Fatigue - The degradation in an individual's cognitive and motor functioning resulting from inadequate rest.

[15] Fatigue Tracking Record (FTR) - A database field used in PQ&S to document circumstances and disposition of situations when work hour limits are exceeded.

[16] Incidental duties - Those unscheduled work activities performed offsite, but required by Entergy, which may be excluded from the work hours calculation when the total cumulative duration is less than 30 minutes in single break period (e.g., unscheduled telephone call(s) to the workers home or other offsite location requesting technical assistance).

[17] Increased threat condition - An increase in protective measure level, relative to the lowest protective measure level applicable to the site during the previous 60 days, as promulgated by an NRC advisory.

[18] Maintenance - The following onsite maintenance activities: Modification, surveillance, post- maintenance testing, and corrective and preventive maintenance of SSCs that a risk-informed evaluation process has shown to be significant to public health and safety. Predictive maintenance activities (NDE, thermography, vibration analysis, etc) that do not result in a change of state of the SSC may be excluded from covered work maintenance.

[19] Offsite - Any area outside the owner controlled area.

[20] Online - The turbine-generator output breaker is connected to the electrical grid.

[21] Onsite - Within the owner controlled area of the nuclear power plant.

[22] Outage - The turbine-generator output breaker is disconnected from the electrical grid.

[23] PQ&S - The Personnel Qualification and Scheduling software module which is part of the eSOMS suite and is used for tracking compliance with 10 CFR 26 Subpart I work hour limits.

[24] Risk Informed Evaluation Process - The basis for identifying Operations and Maintenance related Covered Work (See definitions [9](a) and [9](b), respectively). Tasks subject to Covered Work requirements include, as a minimum, operation or maintenance of those systems, structures, or components modeled in the risk assessment tool (EOOS) used for the on-line risk assessment process (Reference 2.0 [8]). In addition, tasks subject to Covered Work requirements will include:

(a) Those tasks that are identified as risk significant (greater than green) through the online or shutdown risk profile evaluation process (References 2.0 [8] and 2.0 [9] respectively).

(b) Movement of new and irradiated fuel assemblies, including fuel handling for new fuel receipt, fuel movement during refueling, and movement of loaded Dry Storage Casks.

[25] Security System Outage – An outage for maintenance or upgrades to a security system(s), during which time compensatory measures are required.

[26] Shift cycle - A series of consecutive work shifts and days off planned by Entergy to repeat regularly, thereby constituting a continuous shift schedule. A shift cycle cannot exceed 6 weeks for the purposes of calculating the average Minimum Days Off for a covered individual.

[27] Shift turnover - Those activities that are necessary to safely transfer information and responsibilities between two or more individuals between shifts. Shift turnover activities may include, but are not limited to, discussions of the status of plant equipment, and the status of ongoing activities, such as extended tests of safety systems and components. The amount of time allocated in the individual's work schedule should be appropriate for the job. (Typically $\leq$ 30 minutes, but in some cases durations up to 1 hour may be needed.)

[28] Tactical exercise - A force-on-force simulation used to evaluate and demonstrate the capability to defend target sets against selected attributes and characteristics of an adversary. A force-on-force tactical exercise includes all key program elements of a station's protective strategy.

[29] Ten (10)-hour shift schedule - A schedule that averages more than 9 hours, but not more than 11 hours, per workday over the entire shift cycle.

[30] Travel Time - A period of time allocated to an Entergy employee who is designated as a Covered Individual and is required to travel for company business; e.g., travel to/from a new temporary work location or to attend required training or meetings. Commuting time, either at the normal work location or a temporary work location, is not Travel Time and is not included in Work Hours calculations.

[31] Twelve (12)-hour shift schedule - A schedule that averages more than 11 hours, but not more than 12 hours, per workday over the entire shift cycle.

[32] Watchbill– Staffing rosters tied to a departmental or organizational function.

[33] Week – Seven (7) calendar days beginning at 0000 hours on the first day and ending at 2400 hours on the seventh day.

[34] Work hours – The time periods during which a covered individual performs duties for the licensee. This includes all time periods performing duties at specific times scheduled by the licensee (covered work or non-covered work, onsite or offsite) with the following exceptions:

(a) One period of shift turnover time; the turnover time at either the beginning or the end of the shift, but not both, may be excluded.

(b) Within-shift break and rest periods in which there is reasonable opportunity and accommodations for restorative sleep may be excluded.

(c) Unscheduled work hours for the purpose of participating in unannounced emergency preparedness exercises and drills may be excluded.

(d) Incidental time that does not exceed a cumulative total of 30 minutes during any single break period may be excluded.

(e) A variation of up to 15 minutes between actual start/stop times and scheduled start/stop times is permitted without making an adjustment in the work hour tracking software. This allowance is not intended to be used as a means to routinely increase the duration of an individual's work shift.

[35] Work hour controls - The regulatory requirements in 10 CFR 26.205.

4.0 RESPONSIBILITIES

4.1 Vice President, Operations Support

[1] Evaluating fleet staffing levels to ensure individual work hours are managed with the objective of preventing impairment from fatigue due to the duration, frequency, or sequencing of successive shifts.

[2] Providing oversight for fleet fatigue management program to ensure regulatory requirements are met.

4.2 Vice Presidents-Site

[1] Evaluating site staffing levels to ensure individual work hours are managed with the objective of preventing impairment from fatigue due to the duration, frequency, or sequencing of successive shifts.

[2] Authorizing use of work hour control waivers when properly justified by responsible persons (4.11 or 4.12).

[3] Ensuring that issues and trends identified in the annual program review are addressed.

4.3 General Manager, Plant Operations (GMPO)

[1] Reviewing the performance of the station in adhering to work schedules for covered work groups: evaluate the number of schedule changes and reasons for the changes and assess whether or not the schedule is effectively being implemented.

[2] Authorizing use of work hour control waivers when properly justified by responsible persons (4.11 or 4.12).

4.4 Vice President, Nuclear Safety, Emergency Planning and Licensing

[1] Providing resolution for program implementation issues involving interpretation of regulatory requirements.

4.5 Entergy Director, Training

[1] Ensuring training and examination requirements in 10 CFR 26.203(c) are satisfied.

4.6 Entergy Director, Nuclear Oversight

[1] Conducting the periodic audit (no less frequently than nominally every 24 months) of the management of worker fatigue per 10 CFR 26.203(f).

4.7 **Directors, Nuclear Safety Assurance**

[1] Ensuring that the annual review for the site, required by 10 CFR 26.205(e), is completed and documented by January 30 of each year.

[2] Ensuring that the annual summary of fatigue assessments, required by 10 CFR 26.211(g) is completed and documented by January 30 of each year.

4.8 **Supervisors, AA / FFD**

[1] Custodians of fatigue assessment, waiver, and Opt-In / Opt-Out records, submitted by others, for at least three (3) years from the latest date on the record.

4.9 **Entergy Managers**

[1] Verifying staffing levels are adequate to ensure individual work hours are managed with the objective of preventing impairment from fatigue due to the duration, frequency, or sequencing of successive shifts.

[2] Providing guidelines for overtime selection process, including those required by the union contract and the fitness-for-duty requirements outlined in this procedure and in the Entergy Fitness For Duty Program (EN-NS-102).

[3] Evaluating the performance of individuals to ensure individual work schedules prevent impairment from fatigue. This includes evaluating the duration, frequency and sequencing of the hours that are worked by each individual.

[4] Communicating Fatigue Management Program requirements to appropriate personnel within his/her department.

4.10 **Managers, Site Licensing**

[1] Assisting with notifications to the NRC, when required, in accordance with this procedure.

[2] Submitting FFD annual report to NRC including Fatigue Management Program data per 10 CFR 26.203(e).

4.11 **Shift Managers (Operations)**

[1] Determining that a waiver of work hour controls is necessary to mitigate or prevent a condition adverse to safety.

[2] Notifying the Assistant Operations Manager - Shift whenever a waiver is required for on-shift operations personnel.

4.12 **Supervisors, Security Shift Operations**

[1] Determining that a waiver of work hour controls is necessary to maintain site security.

[2] Notifying the Manager, Security whenever a waiver is required for on-shift security personnel.

4.13 **Entergy Supervisors**

[1] Identifying individuals in their workgroup who are classified as covered individuals.

[2] Ensuring that their covered employees' watchbills, work schedules, and hours worked are entered correctly, monitored and tracked in eSOMS PQ&S software.

[3] Ensuring a face-to-face fatigue assessment is conducted and documented (Attachment 9.1 Section 2) not more than four (4) hours prior to beginning work covered by a waiver.

[4] Evaluating the employee's performance and continued fitness-for-duty while working under a waiver.

[5] If evaluating for the issuance of a waiver and the individual's Supervisor or Manager is not on-site, this responsibility may be performed by any Manager or Supervisor who is qualified to oversee the work to be performed by the individual.

[6] Ensure eligibility for outage work hour limits (outage MDOs) is established prior to assigning an individual to an outage schedule.

[7] Monitoring and reporting concerns related to individuals' fitness for duty based on impairment from fatigue (i.e. behavioral observation program).

[8] Generating Condition Reports for waivers of work hour limits.

4.14 **Watchbill Coordinators**

[1] Entering baseline watchbills and schedules into PQ&S.

[2] Assisting supervision with PQ&S operations including adjustments to the baseline watchbills and schedules and creation of Fatigue Tracking Records.

[3] Running PQ&S query reports to support scheduling, evaluation, and reporting activities.

4.15 **eSOMS Administrators**

[1] Support Watchbill Coordinators in the use of PQ&S.

[2] Establish / verify proper configuration settings in PQ&S.

[3] Ensure required PQ&S records are retained for a minimum of 3-years, as stated in 5.11 [2].

[4] Support implementation of PQ&S software upgrades.

4.16 **Contract Managers**

[1] Identify those contract individuals who are classified as covered individuals.

[2] Ensuring that their covered contract individuals' watchbills, work schedules, and hours worked are entered correctly, monitored and tracked in eSOMS PQ&S software, or an alternate work hour tracking method which meets regulatory requirements and is consistent with Entergy's implementation approach.

[3] Ensuring a face-to-face fatigue assessment is conducted and documented (Attachment 9.1 Section 2) not more than four (4) hours prior to beginning work covered by a waiver.

[4] Evaluating the covered contract individuals' performance and continued fitness-for-duty while working under a waiver.

[5] If evaluating for the issuance of a waiver and the individual's Supervisor or Manager is not on-site, this responsibility may be performed by any Manager or Supervisor who is qualified to oversee the work to be performed by the individual.

[6] Ensure eligibility for outage work hour limits (outage MDOs) is established prior to assigning an individual to an outage schedule.

[7] Monitoring and reporting concerns related to contract individuals' fitness for duty based on impairment from fatigue (i.e. behavioral observation program).

4.17 **All Covered Individuals**

[1] Evaluating his/her personal fitness to work based on impairment from fatigue.

[2] Making a self-declaration of fatigue (which applies to all employees) and discussing his/her concerns with supervision or management in the event he/she is not fit for duty due to fatigue.

[3] Verifying his/her working hours are correctly documented regardless of whether he/she is paid for the hours worked. Each covered individual can monitor his/her documented work hours via the posted hard copy, posted electronic copy, or via access to PQ&S depending on which work practice is used by that Department.

[4] Self-monitoring and reporting concerns related to individual fitness for duty based on impairment from fatigue.

[5] Being aware of his/her 9-day work hour history with respect to ceiling limits and minimum break times and notifying supervision if work hour limits may be exceeded when asked to work additional hours.

5.0 DETAILS

5.1 IDENTIFICATION OF COVERED INDIVIDUALS

[1] Individuals Subject to Work Hour Controls

(a) Work hour controls generally apply to Entergy employees, contractors, and vendors performing Covered Work in the following Departments:

(1) Operations
(2) Maintenance
(3) Security
(4) Radiation Protection
(5) Chemistry

(b) Supervisory and management level personnel who assume a role involving the performance of covered work are also subject to the work hour controls.

[2] Opting In/Out of Work Hour Controls.

NOTE

The initial population of Covered Individuals was identified prior to the 10/1/2009 effective date of this procedure. Opt In/Out Forms were not required for that initial population.

(a) The Fatigue Rule Opt In/Out process is a process to evaluate an individual's work to determine if the regulatory work hour controls are applicable.

(b) All supervisors / contract managers must evaluate badged individuals for applicability of work hour controls; by use of the Opt In/Out forms (Attachment 9.3, 9.4, and 9.5).

(c) Any individual/contractor who performs Covered Work will be subject to work hour controls (using the Opt In Work Hour Controls Form in Attachment 9.3).

(d) For non-covered individuals whose work assignment is changed to include Covered Work, work hour controls will apply and a 9-day work history must be documented using the Opt In Work Hour Controls Form in Attachment 9.3, before performing

Covered Work. This requirement ensures that personnel becoming Covered Individuals have had sufficient rest periods, prior to performing covered work.

(e) For covered individuals who do not perform Covered Work on an ongoing basis, their work can be evaluated and documented as "non-covered work" and their supervisor may choose to Opt Out of work hour controls using the Opt Out Work Hour Controls Form in Attachment 9.4.

(f) Completed Opt-In and Opt-Out forms (Attachments 9.3, 9.4, and 9.5) must be forwarded to Access Authorization / Medical for record storage.

(g) Copies of Completed Opt-In forms (Attachment 9.3) must also be forwarded to the Training Department (Superintendent, Technical Training) to ensure that the learning plan in Plateau contains the CBT for EN-OM-123.

[3] Shared Resources

(a) When using Shared Resources per EN-HR-130, the worker's supervisor at the receiving site is responsible to determine if the individual will be performing covered work. Individuals performing covered work must be added to the receiving site work hour control program using Attachment 9.3.

(b) The worker and supervisor at the originating site must ensure that Section 1 of Attachment 9.3, including the 9-day work history, is completed and provided to the receiving site on the first day that the worker reports to the receiving site.

(c) The worker's supervisor at the receiving site must ensure that a valid work schedule for the Covered Individual is established in PQ&S which includes the 9-day work history at the originating site plus a reasonable allowance for travel time.

(d) In lieu of a 9-day work history, the receiving site may elect to provide a 34-hour break before the Covered Individual commences work.

(e) The worker's supervisor at the receiving site also ensures that a 9-day work history is provided to support the Covered Individual returning to the originating site.

5.2 WORK HOUR LIMITS FOR COVERED INDIVIDUALS

NOTES

Work hour tracking is accomplished using the eSOMS PQ&S software. Contractor / vendors may use their own work hour tracking methods, which meet regulatory requirements (10 CFR 26, Subpart I) and Entergy's implementation approach.

Work hour limits for covered work may only be exceeded during Exception Conditions (Section 5.3) or when allowed by approved Waivers and the associated Fatigue Assessment (Section 5.9).

[1] Work hour limits for individuals performing Covered Work consist of three concurrent components: maximum ceilings, minimum breaks, and minimum days off (MDO).

[2] The maximum ceilings which apply at all times are a maximum of:

(a) 16 work hours in any 24-hour period,

(b) 26 work hours in any 48-hour period, and

(c) 72 work hours in any 7-day period.

[3] The minimum break times which apply at all times are a minimum of:

(a) 10-hour break between successive work periods, except that an 8-hour break is allowed when necessary to accommodate a crew's scheduled transition between work schedules or shifts, and

(b) 34-hour break in any 9-day period.

[4] The MDOs that apply when the plant is on-line are:

Table 1: Normal Operation MDO Requirements *

Work Group	8-hour shift	10 hour shift	12 hour shift
Maintenance	1 day off per week	2 days off per week	2 days off per week
Operations Radiation Protection Chemistry Fire Brigade	1 day off per week	2 days off per week	2.5 days off per week
Security	1 day off per week	2 days off per week	3 days off per week

* Average days off per week; averaged over a shift cycle of up to 6 weeks in duration

[5] The optional MDOs that may be applied during plant outages for a maximum of 60 days are:

Table 2: Outage MDO Requirements

Work Group	Days Off
Maintenance	1 day off in any rolling 7-day period
Operations Radiation Protection Chemistry Fire Brigade	3 days off in each successive, non-rolling 15-day period
Security	4 days off in each successive, non-rolling 15-day period

[6] The 60-day periods may be extended for each individual in 7-day increments for each non-overlapping 7-day period in which the individual has worked not more than 48 hours during the unit or security system outage or increased threat condition, as applicable.

[7] For dual unit sites, when one unit is in an outage and the other unit is on-line, any Covered Individual who performs outage tasks may work a schedule based on the Outage MDOs. However, at least 2 Senior Operators and 2 Reactor Operators in the control room for the on-line unit must remain on a schedule based on the on-line MDOs.

[8] For purposes of calculating MDOs, a day off is defined as a calendar day in which the individual does not start a work shift.

[9] One period of shift turnover, either at the beginning or the end of the shift may be excluded from the calculation of actual hours worked, the minimum break time, and the minimum days off. This allowance for excluding shift turnover time may not include activities such as holdover for late arrivals, holdover for event investigations, and early arrival for required meetings, training, and special evolution briefings.

[10] Within shift rest breaks during which the individual is provided opportunity and accommodations for restorative sleep may be excluded from the calculation of actual hours worked.

[11] When working during the transition from daylight savings time to standard time, the extra hour incurred during that shift may be excluded from the calculation of actual hours worked. The actual hours worked are used in the calculation for the reverse transition.

[12] Incidental time worked by a covered individual, when the cumulative time during a single break period exceeds a nominal 30 minutes, must be included in the work hours calculation.

[13] When an Entergy employee or contractor/vendor works during two or more unit outages or security system outages (or a combination thereof) at one or more Entergy sites, and the interval(s) between successive outages is less than 9 days, the supervisor must ensure that the individual has had a 34 hour break period in the previous 9 days and that the maximum ceilings (5.2 [2]) have not and will not be exceeded.

[14] Section 5.10 [2] describes periodic review requirements which includes a review for instances where Covered Individuals exceed 54 hours per week, averaged over the shift cycle. Although a waiver / fatigue assessment is not required when a schedule exceeds this review criterion, the supervisor approving the schedule must complete a Fatigue Tracking Record in PQ&S to document the circumstances for at least one day in the shift cycle. Additional FTRs may be completed on other days if additional circumstances contributed to the work hours exceeding the 54 hour average.

5.3 EXCEPTIONS TO WORK HOUR CONTROLS

[1] Force-on-force tactical exercises

- For the purposes of compliance with the minimum day off requirements, the Site may exclude shifts worked by security personnel during the actual conduct of force-on-force tactical exercises evaluated by the NRC when calculating the individual's number of days off.

[2] Common defense and security

- The Site need not meet the work hour control requirements when informed in writing by the NRC that these requirements, or any subset thereof, are waived for security personnel in order to assure the common defense and security, for the duration of the period defined by the NRC.

[3] Plant emergencies

- The Site need not meet work hour control requirements during declared emergencies, as defined in the Site Emergency Plan.

5.4 SCHEDULES

[1] For personnel defined as covered workers in this procedure work hour schedules are developed and maintained in eSOMS PQ&S software. Details on developing a work schedule can be found in EN-OM-123-02 Working Hour Limits eSOMS Users Guide.

[2] When designing schedules, the following factors should be considered with the performance objective of preventing impairment from fatigue due to the duration, frequency, or sequencing of successive shifts:

- Duration of scheduled work period (typically <12 hour shifts)
- Duration of break period
- Consistent start times for work periods (e.g. 6 or 7 a.m.)
- Considerations of start times that are consistent with circadian factors
- Consistent stop times for work periods
- Consistent rotation (e.g., if working a 5-week shift rotation, the scheduled work days and days off are repeated every five weeks)

- Stable 24-hour shift rotation (e.g., 3 X 8s, 2 X 12s, 2 X 10s with four hours un-staffed)
- The impact of backward shift rotation (rotation of the start of the shift from days to night to swings)
- Rotating schedules provide suitable transition between shifts (days/nights, days/swings/nights), 8-hour shift rotations rotate forward or provide more than 24 hours between work periods to adjust circadian rhythm; 12-hour shift rotations provide 34 hours off during day/night transitions
- Long range predictability is a key aspect of fatigue mitigation
- Circadian factors - fixed vs. rotating shifts
- Allowances for margin to accommodate unscheduled time
- Training and qualification status to ensure that scheduled personnel are qualified to perform assigned duties
- Vacation scheduling
- Known short/long term absences.

[3] The following provides an overview of the typical scheduling process using PQ&S:

> NOTE
>
> Words in ***bold italics*** refers to terminology / functions in PQ&S.

- The Watchbill Coordinator (WBC) develops the baseline schedule based on input (i.e., available staffing, required shift coverage, qualifications, etc) from the group supervisor or contract manager.
- Multiple baseline watchbills may be established to cover different situations, such as online and outage conditions.
- The WBC ***instantiates*** the desired watchbill for a selected period of time or number of shift rotation cycles into the future.

- The WBC updates the ***instantiated*** watchbill with any known schedule variations (i.e., approved vacations, shift swaps, etc) and makes schedule adjustments, if needed, to clear any resulting rule violations.

- The WBC or supervisor / contract manager ***approves*** the final schedule. This step in PQ&S is typically completed several days prior to the schedule start date to support distribution of the schedule to affected workers. Completing this step before the first scheduled work shift commences, ensures that the assigned schedule does not exceed work hour limits. Approved schedules may be distributed by posting hardcopies printed from PQ&S and /or by providing PQ&S view access rights to affected workers.

- The supervisor or contract manager monitors actual hours worked compared to scheduled hours and ensures that any schedule variations are approved in advance. The WBC can assist the supervisor / contract manager in entering schedule variations and making other adjustments to the schedule to clear any resulting rule violations.

- In the event that a plant situation for covered work requires and warrants a schedule variation that must be approved via the waiver and fatigue assessment process (Section 5.9 of this procedure) the supervisor / contract manager must ensure that a PQ&S ***Fatigue Tracking Record*** is completed for or associated with each instance that rule limits are exceeded (i.e., complete or associate an FTR for every rule limit exceeded on every day that the rule limit(s) are exceeded, except for the 54-hour average limit which is addressed in step 5.2.[14]).

- The supervisor / contract manager periodically ***validates*** completed work histories. This step, which locks the record for documentation purposes, is typically performed at time intervals that coincide with the payroll timesheet process. This step should be completed not later than 14 calendar days following the end of the last shift worked in that schedule period.

> NOTE
>
> Data recorded in PQ&S for the work hour calculation will not necessarily be the same as data recorded in the timekeeping tool used for payroll purposes.

[4] The work hour history recorded in PQ&S needs to reflect all work hours that are subject to the work hour limits, including periods of incidental time which exceed the 30 minute limit, time periods associated with call-ins, and time periods or durations allocated for travel.

[5] In the event of a eSOMS PQ&S system outage:

- Ensure eSOMS Administrator is promptly notified to implement recovery activities.
- Maintain current approved work schedules, if possible, for the duration of the system outage.
- Manually review any schedule changes for compliance with work hour limits.
- Retain a hardcopy of any schedule changes until PQ&S is returned to service and the schedule changes can be entered into PQ&S.

5.5 TRANSITIONING BETWEEN SCHEDULES

[1] To determine the applicable day off requirement supervisors should use (in eSOMS PQ&S software) a work schedule of no more than 6 weeks encompassing the schedule transition.

[2] If the average shift duration is not more than 9 hours, then the minimum day off requirements for 8-hour shift schedules would apply.

[3] If the average shift duration is more than 9 hours and not more than 11 hours then the minimum day off requirements for 10-hour shift schedules would apply.

[4] If the average shift duration is more than 11 hours, then the minimum day off requirements for 12-hour shift schedules would apply

[5] If an individual joins a shift after the start of a shift cycle, they shall meet the minimum days off requirement going forward and they shall meet the minimum days off requirement for the shift from which they transitioned.

[6] Emergent plant conditions may require changes to pre-planned work schedules. Attachment 9.8 provides an overview for responding to emergent conditions.

5.6 CALCULATING HOURS WORKED

[1] Work hour limits and the associated calculation and tracking of work hours apply to the individuals who perform or direct covered work. This calculation can include both covered and non-covered work because both contribute to fatigue.

[2] Supervisors/Contract Managers or designee is responsible for final approval of fatigue rule work hour calculations.

[3] Work hour records should show the number of hours worked each calendar day, whether salary or hourly-paid worker. Work period start and stop times should be recorded and documented in a consistent manner.

[4] Work hours also include but are not limited to the following:

(a) All within-shift break times and rest periods during which there is no reasonable opportunity or accommodations appropriate for restorative sleep.

(b) Shift holdovers to cover for late arrivals of incoming shift members.

(c) Early arrivals of individuals for required meetings, training, or pre-shift briefings for special evolutions (these activities are not considered shift turnover activities).

(d) Holdovers for interviews needed for event investigations.

(e) Travel time for Entergy employees, as defined in step 3 [30], is included in work hours calculations. The amount of travel time included in the work hours calculation should be based on factors such as distance, mode of travel, and, if applicable, opportunity for rest during the travel period. If Entergy directs the individual to travel at a specific time, then that specific time must be recorded in PQ&S. If the employee is allowed to travel at their own discretion, then the travel time allowance may be recorded at any time during the unscheduled period available for travel. Regardless of what time period is used to record the travel time allowance, that time is included in the work hour calculation to verify that ceiling, break, and MDO limits are not exceeded.

(f) Call-in work periods. A call-in is considered an addition to the normal work schedule period. The work hours can be accounted for in the following three methods depending on timing and circumstances of the call-in work period:

(1) The call-in hours can be considered a separate work period. This method requires a 10 hour break before the call in period and after the call-in period.

(2) The call-in hours can be considered an extension to the preceding or succeeding work period. Using this method, the intervening hours of the extended work period must be counted.

(3) A waiver can be processed for the required 10 hour break between successive work periods.

(g) Incidental duties performed off-site

(1) Supervisors may exclude from the calculation of an individual's work hours unscheduled work performed off-site (e.g., technical

assistance provided by telephone from an individual's home) provided the total duration of the work, which is required by the supervisor, does not exceed a total of 30 minutes during any single break period or day off.

(2) Incidental duties totaling more than 30 minutes in any single break period or day off must be included in the work hour calculation.

(h) Unplanned Outages

(1) Average days off are applicable during normal operations. During an outage, days off are required on a day basis and not on an average basis (e.g., 1 day off per week for maintenance workers and 3 or 4 days off every non-rolling 15 day period for the remainder of the covered individuals).

(2) When entering an unexpected outage, Entergy shall be considered to be in compliance with the rule if the schedule for the shift cycle would have provided for the required average days off.

(i) Unannounced Emergency Plan Exercises and Drills

(1) Supervisors should exclude from the calculation of an individual's work hours, including days off, the time the individual works unscheduled work hours for the purpose of participating in the actual conduct of an unannounced emergency preparedness exercise or drill.

[5] For the purposes of calculating the average number of days off, the duration of the shift cycle shall not exceed 6 weeks and may be of a shorter duration.

[6] Within-Shift Breaks and Rest Periods:

(a) Time spent for meals may not be excluded from the work hour calculations.

(b) Any other break time allowed during the scheduled work day that does not allow opportunity or accommodations for restorative sleep is included in the work hour calculation.

(c) Only that portion of a break or rest period during which there is a reasonable opportunity and accommodation for restorative sleep (e.g. a rest of at least 30 minutes) may be excluded.

[7] Paid Time Not Included in the Work Hour Calculations:

(a) Pay for hours not worked:

(1) Vacation/Personal Days

(2) Short Term/Long Term Disability (STD/LTD)

(3) Jury Duty/Military Leave/ Bereavement

(4) Holiday pay

(5) Specific hours to be paid identified in union contracts – this could be a minimum amount of hours to be paid to a worker for call-ins, training, etc.

(b) Declared Plant Emergencies as defined in the Site Emergency Plan.

(c) Unannounced emergency preparedness exercises and drills.

[8] Personal and Discretionary Time

(a) Individuals may be onsite on their own personal time prior to or following their assigned shift engaged in activities such as reading, eating, and use of a fitness center. This personal time is not included in the Work Hours Calculation.

(b) Individuals may be off-site engaged in work-related activities, at their own discretion, such as reading email and self-study time. This discretionary time is not included in the Work Hours Calculation.

5.7 FATIGUE ASSESSMENTS

NOTE

Fatigue Assessments for waiver of work hour limits apply only to Covered Individuals. Fatigue Assessments for all other circumstances (Self-Declaration, For Cause, Post-Event, and Follow-Up) apply to all individuals specified in 1.0[2].

[1] Personnel Action Requirements

(a) Personal Expectations

(1) Personnel are required to be fit for duty including being well-rested and mentally alert.

(b) Compliance with Fatigue Assessment

(1) The refusal on the part of an individual to submit to a fatigue assessment may subject the individual to disciplinary action. Factors to be considered in assessing disciplinary action shall include the employee's job assignment and past work record.

(2) Personnel subject to fatigue assessments who refuse to be assessed will be considered fatigued and unable to perform their duties.

[2] Self-declaration

(a) Self-Declaration Requirements

(1) All applicable individuals have the right to self-declare. Self-declaration of fatigue should be encouraged and respected.

(2) It is the responsibility of each individual to communicate a clear self-declaration of fatigue to their supervisor. This may be verbally initiated, when necessary, by using the following statement:

"I am too fatigued to perform the duties assigned to me and would like to make a self-declaration of fatigue as defined in the Fatigue Management Program, EN-OM-123."

(3) Once an individual has made a verbal self-declaration, they should be removed as soon as practicable, from duty and given the opportunity to complete Attachment 9.1. Fatigue Assessment. The individual shall ensure their supervisor receives the completed Fatigue Assessment (Attachment 9.1) as soon as practical, but not later than the end of that shift.

(4) Following the self-declaration notification, the supervisor may, in lieu of performing a fatigue assessment :

a. Permit or require the individual to take a break of at least 10 hours.

b. Reassign the individual to non-covered work if the supervisor concludes that the individual is fit to safely and competently perform those other duties. In this case, completion of Opt Out Attachment 9.4 is required.

(5) If an individual is performing or being assessed for work under a waiver and makes a self-declaration of fatigue, the supervisor shall, as soon as practicable, stop the individual from performing any

covered work and allow that individual to complete Attachment 9.1 Fatigue Assessment.

a. A self-declaration fatigue assessment shall be performed as soon as possible.

b. The individual may continue performing covered work if required under other regulations (e.g., meet minimum licensed operator staffing).

c. If the individual must continue performing the covered work until relieved, then supervisor shall take immediate action to relieve the individual.

(b) Handling Self-Declaration

(1) A fatigue assessment (Attachment 9.1) shall be conducted in response to an individual's self-declaration to his or her supervisor that he or she is not fit to safely and competently perform his or her duties for any part of a working tour because of fatigue, except if, following the self-declaration, Entergy management permits or requires the individual to take a break of at least 10 hours before the individual returns to duty.

(2) Individuals sent home in lieu of or as a result of a fatigue assessment should be evaluated to determine if alternate transportation is appropriate. Personnel safety should be considered in any decision to send someone home due to fatigue.

(c) Chronic Self-Declaration

(1) Individuals that exhibit chronic self-declaration that they are not fit for duty as a result of fatigue should be considered for referral to the Employee Assistance Program.

(2) Individuals that exhibit chronic self-declaration that they are not fit for duty as a result of fatigue, absent a sound medical reason, may be subject to disciplinary action.

[3] For Cause

(a) Conduct fatigue assessment (Attachment 9.1) in response to reasonable suspicion that an individual is not fit to safely and competently perform their duties for any part of a work shift because of fatigue,

(b) If an individual makes a self-declaration of fatigue upon being identified for a "for cause" fatigue assessment, that individual shall be removed, as soon as practicable,

from duty and given the opportunity to complete Fatigue Assessment form self-declaring.

(c) The individual who observed the conditions of impaired alertness may not conduct the fatigue assessment.

[4] Post-Event

(a) A fatigue assessment (Attachment 9.1) shall be performed in response to events requiring post-event drug and alcohol testing.

(b) Necessary medical treatment shall not be delayed in order to conduct a fatigue assessment.

(c) The individual who conducts the Post-Event fatigue assessment shall not have:

(1) Performed/directed the work activities during which the event occurred.

(2) Performed a fatigue assessment for any involved individual within 24 hours prior to the event.

(3) Evaluated or approved the waiver allowing any of the individual(s) who were involved in the event to perform/direct the work activities.

[5] Follow-Up

(a) If a fatigue assessment was performed for cause or in response to a self declaration and the individual is returned to duty following a break of less then 10 hours in duration, then the individual shall be reassessed for fatigue (Attachment 9.1) as well as the need to implement controls and conditions before permitting the individual to resume performing any duties. If no break occurs, only one assessment is required.

(b) Individuals shall provide complete and accurate information that may be required to address the required factors.

(c) The fatigue assessor shall limit inquiries of the individual to information necessary to assess the required factors and review the individual's performance, if applicable.

(d) Fatigue assessments shall not conclude an individual is fit-for-duty solely based on the fact that the individual's work hours have not exceeded any of the work hour limits or that the individual has had the minimum breaks or minimum days off, as applicable.

(e) Following a fatigue assessment, the supervisor shall determine and implement the controls and conditions, if any, which are necessary to permit the individual to resume the performance of their duties for Entergy, including the need for a break.

(f) Supervisors shall document the circumstances that necessitated the fatigue assessment and any controls and conditions. A copy of this record shall be forwarded to and maintained by Access Authorization / Medical.

[6] Assessment Process

(a) The individual being assessed completes the assessment of work hours and fatigue Attachment 9.1 Section 1.

(1) Provide name, department and date.

(2) Select the reason for this evaluation.

a. Self-Declaration

b. For Cause

c. Post-Event

d. Follow-Up

e. Waiver

(3) Provide 14 day work history to assess the circadian variation in alertness and performance.

(4) Declare whether a break of at least 10 hours has been taken between successive work periods everyday for the last 14 days (or at least 8 hours if transitioning between shifts).

(5) Declare whether incidental duties performed off-site have been included in work history provided.

(6) Indicate the number of hours of sleep in the last 24 hours.

(7) Indicate the average number of hours of sleep in each of the last 9 days.

(8) Describe the work activity to be performed.

(9) Determine if the activity to be performed can be completed without oversight.

(10) Determine mental alertness.

(11) Complete by providing the name, signature, date, time and comments if necessary of individual and corresponding supervisor.

> NOTE
>
> The Training and Qualification requirement for a Fatigue Assessor is met by successful completion of the NANTeL Generic Plant Access training module which covers the 12 Knowledge and Ability (KA) elements specified in 10CFR26.29 and 10CFR26.203(c). An additional NANTeL Fatigue Assessor Training module is available.

(b) Supervisor/Qualified Fatigue Assessor completes Face-to-Face Fatigue Assessment using Attachment 9.1 Section 2:

(1) Review the work individual's work history as documented in PQ&S as well as the work history provided by the individual in the assessment of work hours Attachment 9.1 Section 1.

(2) Perform a face-to-face assessment. The reviewer should examine:

a. Potential for acute or cumulative fatigue considering the 14-day work history

b. Potential for circadian effects on alertness and performance considering the time of day of the waiver period

c. Potential for fatigue-related impacts on the risk-significant aspects of the work to be performed

(3) Based on review, determine if the individual is permitted to work without restrictions;

a. Yes, the individual is fit-for-duty and may continue to work with no restrictions (individual cannot be returned to covered work if already working under a waiver and has made a self-declaration of fatigue).

b. No, the individual is not fit-for-duty and must be provided a break of at least 10 hours.

c. No, the individual is fit-for-duty and may continue to work but is limited to performing non-covered work (Opt Out Attachment 9.4 required).

d. No, the individual is fit-for-duty and may perform the work described below with break(s) and/or oversight described, if necessary.

(c) Provide the results of the fatigue assessment to the individual.

(d) Ensure eSOMS PQ&S software is updated with 14 day work history.

(e) Generate and record Condition Report. Do not include personal information in the Condition Report statements.

(f) Complete Fatigue Assessment by providing name, signature, date and time.

(g) Forward completed form to Access Authorization / Medical.

5.8 CONFLICT RESOLUTION

[1] If an individual disagrees with the results of a fatigue assessment, then the individual may request a second assessment by another trained, qualified and independent assessor.

[2] The individual may also follow the steps available in the Employee Concerns Program.

5.9 WAIVERS

NOTES

Waivers may only be granted under limited circumstances. See Definition 3.0 [6].

A new waiver and fatigue assessment is required prior to each new work period / shift in which any one or more work hour limits will be exceeded

Waivers are completed before start of the waiver period. (Attachment 9.2 Section 1 completed by supervisor, Section 2 completed by trained Fatigue Assessor, and Section 3 completed by Vice President-Site, GMPO, or designee).

Section 4 is completed by supervisor after end of waiver period.

[1] Waivers apply to Covered Individuals performing covered work in excess of work hour limits.

[2] The use of waivers is authorized by a Vice President-Site, General Manager Plant Operations, or designee.

[3] The process for requesting waivers includes the following distinct steps conducted by the supervisor using Attachment 9.2 Section 1:

(a) Identify that a waiver is needed.

(b) Name the individual for which a waiver is to be requested.

(c) Identify deviations (work hour limits) for which a waiver is required.

(d) Record date and time waiver would start. (A Fatigue Assessment must be completed during the 4-hour window prior to the start of the waiver)

(e) Identify duration of the waiver (e.g., how many hours beyond 16 in 24).

(f) Describe the work to be performed. This should be in adequate detail to support the evaluation performed by the Fatigue Assessor.

(g) Describe circumstances that cause the need for exceeding limits (must address conditions that are adverse to security/safety).

(h) Obtain concurrence from the Operations Shift Manager, or the Security Shift Operations Supervisor, or a designee.

[4] No more than 4 hours prior to exceeding work hour limits, a qualified Fatigue Assessor shall complete Attachment 9.2 (Section 2).

(a) Attach Fatigue Assessment Attachment 9.1 (Section 1 and Section 2).

(b) Review attached documents and determine whether any restrictions should be placed on the individual being assessed.

(c) Determine if there is reasonable assurance that the individual will be able to safely and competently perform duties during the additional work period for which the waiver is to be granted.

- If there is not reasonable assurance, the waiver is not valid.

[5] Vice President-Site, General Manager Plant Operations, or designee authorizes the individual's overtime limits using Attachment 9.2 Section 3.

[6] After completion of the waiver period, the supervisor completes closeout review using Attachment 9.2 Section 4.

(a) Identify time actually worked, beyond limits, under this waiver.

(b) Ensure that a Condition Report documents the circumstances requiring the waiver (do not record names or personnel information in CRs).

(c) Ensure PQ&S is updated with actual hours worked and an FTR is associated with all limits violated on all days that are covered by the waiver.

(d) Evaluate whether the individual performed satisfactorily. If not, generate a separate Condition Report.

(e) Closeout with name, signature, date, and time.

[7] Supervisor should forward all sections of the waiver and attached Fatigue Assessment to Access Authorization / Medical.

[8] Discovery of work hour limits exceeded without prior approval:

(a) Upon discovery that one or more work hour limits were exceeded and an Exception allowance (Section 5.3) or Waiver is not in place, a Condition Report for violation of NRC requirements shall be processed in accordance with the Corrective Action Program (EN-LI-102). PQ&S shall also be updated to ensure that an FTR is associated with every violation for every day affected by this circumstance.

(b) This situation could also be subject to the 24-hour reporting requirement stated in step 5.12 [8].

(c) If the condition is discovered while the affected individual is still engaged in covered work and working in excess of one or more work hour limits, the supervisor shall take prompt action to address the fatigue aspects of the affected worker

- Provide sufficient time off to be in compliance with work hour limits, or
- Follow the waiver / fatigue assessment process, if eligible.

5.10 AUDITS AND REVIEWS

[1] The Director of Nuclear Oversight shall ensure that the entire Fitness for Duty Program, including the Fatigue Management Program, is periodically audited (Reference 2.0 [10]).

[2] The Director, Nuclear Safety Assurance shall ensure that the annual review required by 10 CFR 26.205(e) is completed and documented by January 30 for the prior calendar year. Attachment 9.7 provides a typical report format and the review shall identify at least the following data:

- The number of instances where a Covered Individual exceeded 54 hours per week, averaged over the shift cycle, during online work periods.
- All instances where a Covered Individual was granted more than one waiver during the review period.

[3] A review of the above data shall be performed to assess the adequacy of staffing levels for those activities that are subject to work hour controls.

[4] Review documentation shall include a description of the methods used, any adverse trends or other deficiencies identified by the review, and any corrective actions completed or planned.

[5] The Director, Nuclear Safety Assurance shall ensure that the annual summary of fatigue assessments required by 10 CFR 26.211(g) is completed and documented by January 30 for the prior calendar year.

5.11 RECORDS

[1] The Supervisors, AA/FFD shall retain documentation of all fatigue assessments, waivers, and Opt-in / Opt-Out Forms for at least three (3) years.

[2] Records of shift schedules and actual hours worked for Covered Individuals are maintained in PQ&S or an archive database for at least three (3) years.

[3] Corrective actions identified as a result of fatigue assessments, waivers, the annual review of work hour controls, and periodic program audits shall be retained in PCRS or an archive database for at least three (3) years.

5.12 REPORTS

[1] The Manager, Site Licensing is responsible for submitting the annual FFD Program Performance Report for the site to NRC.

[2] The FFD Program Performance Report shall be submitted annually to the NRC by March 1 for the prior calendar year. [10 CFR 26.717]

[3] The FFD Program Performance Report shall contain data pertaining to the drug and alcohol aspects and the fatigue management aspects of the Fitness-for-Duty Program.

[4] Performance data pertaining to the drug and alcohol aspects of the Fitness-for Duty Program are as specified in EN-NS-102.

[5] Performance data pertaining to the fatigue management aspects of the Fitness-for-Duty Program are as follows [10 CFR 26.203(e)]:

(a) The number of instances in which each work hour control was waived for individuals not working on outage activities.

(b) The number of instances in which each work hour control was waived for individuals working on outage activities.

(c) A summary of the distribution of waiver use among individuals in each worker category.

(d) A summary of corrective actions, if any, resulting from the analyses of these data, including fatigue assessments.

[6] Submittal of the Annual FFD Program Performance Report to NRC may be in the form of a transmittal letter to NRC or the data may be transmitted using the Fitness-for-Duty Electronic Information Exchange (EIE) Portal available via the NRC website.

[7] The information for items [5](a) through [5](c) is accessible from the reports available in eSOMS PQ&S (See EN-OM-123-02 Working Hour Limits eSOMS Users Guide for further guidance). The information for item [5](d) is available in PCRS.

[8] Watchbill Coordinators are responsible for providing the required data from Step [5] for their respective site to the Site, Licensing Manager or designee.

[9] In the event that a condition is discovered that is a potentially significant violation or failure of Entergy's fatigue management policy or program, the affected Site Licensing Manager shall be promptly notified and consulted regarding the need for a 24-hour report to the NRC per 10 CFR 26.719 and EN-LI-108.

6.0 INTERFACES

6.1 eSOMS PQ&S software

7.0 RECORDS

7.1 Records of shift schedules and shift cycles of Covered Individuals (maintained in PQ&S).

7.2 Records of actual hours worked for Covered Individuals (maintained in PQ&S).

7.3 Documentation of Fatigue Assessments, per Attachment 9.1.

7.4 Documentation of waivers granted, per Attachment 9.2.

7.5 Opt In / Opt Out Forms per Attachments 9.3, 9.4, and 9.5.

7.6 Documentation of Audits and Reviews identified in Section 5.10.

8.0 SITE SPECIFIC COMMITMENTS

Step	Site	Document	Commitment Number or Reference
[1]	None	None	None

9.0 ATTACHMENTS

9.1 Fatigue Assessment
9.2 Work Hour Controls Waiver
9.3 Opt In Work Hour Controls
9.4 Opt Out Work Hour Controls
9.5 Group Opt Out Work Hour Controls
9.6 Process Overview Flowcharts
9.7 Typical Annual Review Report
9.8 Overview of Response to Emergent Condition

Fatigue Assessment

Section 1 – Assessment of Work Hours and Fatigue	To be completed by individual being assessed

Print your name, department and today's date below.

_____ / _____ / _____

Name Department Date

1) Select reason for evaluation.

- ☐ Self-Declaration (checking this box, completing this section, and signing below, indicates a formal self-declaration of fatigue and that all information provided is complete and accurate)
- ☐ For Cause (include description of observed behavior and name of individual who observed condition in comments, page 2)
- ☐ Post-Event (supervisor include description and Condition Report number of event and individual's involvement in comments, page 2)
- ☐ Follow-Up (required when an assessment was conducted for cause or for self-declaration upon return to work with a break of <10 hours; describe in comments, page 2)
- ☐ Waiver

2) Provide your work history of the last 14 days in order to assess circadian variation in alertness and performance using the table below where Day -1 is yesterday (or last 24 hours). Include all incidental duties performed off-site exceeding 30 minutes.

Date:	-1	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12	-13	-14
Shift schedule[1]														
Hours worked[2]														
34-hour break[3]														

[1] Record D for days, N for nights (for 12- or 10-hour shifts); D for days, S for swings, M for midnights (for 8-hour shift)
[2] Do not include both shift turnover durations for one period, only one turnover.
[3] Check the boxes of those days you have had a break of at least 34 hours before your shift.

3) Have you had a break of at least 10 hours between successive work periods every day for the past 14 days or at least 8 hours if you were transitioning between shifts?

Yes ☐ No ☐

Forward completed Attachment 9.1 Sheets 1-3 to Access Authorization / Medical

ATTACHMENT 9.1 FATIGUE ASSESSMENT

Sheet 2 of 3

4) How many hours of sleep have you had in the last 24 hours? _____

5) How many hours of sleep have you averaged each day in the last 9 days? _____

6) Describe the work activity you are performing.

_____

_____

_____

7) Do you feel you can perform this work activity without oversight? (e.g. intermittent supervision or independent reviews)

Yes ☐ No ☐ N/A for Self Declare ☐

If no, describe oversight necessary.

_____

8) Are you mentally alert?

Yes ☐ No ☐

Completed by: _____ / _____ _____ / _____

Name Signature Date Time

Individual Comments:

_____

_____

_____

Completed by: _____ / _____ _____ / _____

Supervisor Signature Date Time

Supervisor Comments:

_____

_____

_____

Forward completed Attachment 9.1 Sheets 1-3 to Access Authorization / Medical

Section 2 – Supervisor Face-to-Face Fatigue Assessment	To be completed by Supervisor/Qualified Fatigue Assessor

NOTE: Refer to EN-OM-123, Fatigue Management Program, for guidance on individuals NOT permitted to perform fatigue assessments in for cause or post-event related assessments. Fatigue assessments for waivers must be completed by an individual qualified to oversee the work or related work required to be performed.

Individual's Name: _____

1) Review the individual's work history as documented in PQ&S and the information provided by the individual in Section 1. (PQ&S data is N/A for non-Covered Individuals)

2) Perform a face-to-face fatigue assessment to observe for physical signs of fatigue and to evaluate the following for the proposed waiver period:
   - Potential for acute or cumulative fatigue considering the 14-day work history
   - Potential for circadian effects on alertness and performance considering the time of day of the waiver period
   - Potential for fatigue-related impacts on the risk-significant aspects of the work to be performed

3) Based on these reviews, should this individual be permitted to work without restrictions?

☐ Yes, the individual is fit-for-duty and may continue to work with no restrictions (individual cannot be returned to covered work if already working under a waiver and has made a self-declaration of fatigue).

☐ No, the individual is not fit-for-duty and must be provided a break of at least 10 hours.

☐ No, the individual is fit-for-duty and may continue to work but is limited to performing non-covered work.

☐ No, the individual is fit-for-duty and may perform the work described below with break(s) and/or oversight described, if necessary:

4) Have the results of this fatigue assessment been provided to the assessed individual?

☐Yes ☐No

5) Ensure PQ&S is updated with 14-day work history. ☐ PQ&S updated (N/A if non-Covered)

6) Generate Condition Report. CR Number: _____

_____ / _____ _____ / _____

Qualified Fatigue Assessor Signature Date Time

Forward completed Attachment 9.1 Sheets 1-3 to Access Authorization / Medical

Work Hour Controls Waiver

Section 1 – Request	To be completed by Supervisor

Print your name, department and today's date below.

_____ / _____ / _____

Name Department Date

1) Identify the individual who will exceed or not meet a 10 CFR 26 Control:

Name: _____ Department: _____

2) Identify waiver start, end, and duration:

Date/Time Waiver to Start: _____ / _____
Date Time

Date/Time Waiver to End: _____ / _____
Date Time

Waiver Duration (hours outside work hour controls): _____

3) Check the limit(s)/minimum requirement(s) that will be exceeded/not met:
- ☐ > 16 work hours in any 24-hour period
- ☐ > 26 work hours in any 48-hour period
- ☐ > 72 work hours in any 7-day period
- ☐ < 10-hour (consecutive hours) break between successive work periods
- ☐ < 34-hour (consecutive hours) break in any 9-day period
- ☐ any MDO limit

4) Identify plant condition (circle one): Online Outage

5) Required numbers of days off: _____ per _____

6) Shift schedule applied to individual: _____-hour shift

7) Identify and describe the work/activity for which the waiver will be issued:

_____

_____

Forward completed Attachment 9.2 Sheets 1-4 to Access Authorization / Medical

ATTACHMENT 9.2 WORK HOUR CONTROLS WAIVER

Sheet 2 of 4

Individual's Name: _____

8) Describe circumstances that cause the need for exceeding limits (must address conditions that are adverse to security/safety; see Definition 3.0 [6]):

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Prepared by:

_____ / _____ _____

Supervisor Signature Date

Concurrence: Operations Shift Manager, or Security Shift Operations Supervisor, or designee:
(See 3.0[6], 4.11, 4.12, and 5.9)

_____ / _____ _____

Print Name Signature Date

Forward completed Attachment 9.2 Sheets 1-4 to Access Authorization / Medical

Section 2 – Face-to-Face Fatigue Assessment	To be completed by a Qualified Fatigue Assessor during the 4 hour window prior to exceeding overtime limits.

NOTE: **Refer to EN-OM-123, Fatigue Management Program, for guidance on individuals NOT permitted to perform fatigue assessments in for cause or post-event related assessments.**

Individual's Name: _____

1) Attach completed Fatigue Assessment, Attachment 9.1 Section 1 and Section 2.

2) Based on review of all attached documents, should the individual being assessed be permitted to work without restrictions?

☐ Yes, the individual may continue to work with no restrictions.
☐ No, the individual may continue to work but is limited to performing non-covered work.
☐ No, the individual may continue to work but is limited by the conditions below.

Describe work allowed, break given and/or oversight, if necessary:

_____

_____

3) Is there reasonable assurance that the individual will be able to safely and competently perform duties during the additional work period for which the waiver is to be granted?

☐Yes ☐No (If no, waiver is not valid)

Completed by: _____ / _____ _____ / _____
Print Name Signature Date Time

Section 3 – Authorization to Exceed Overtime Limits	To be completed by Vice President, General Manager Plant Operations, or designee

Authorized by: _____ / _____ _____
Print Name Signature Date

Forward completed Attachment 9.2 Sheets 1-4 to Access Authorization / Medical

Section 4 – Supervisor Closeout Review	To be completed by Supervisor after waiver period

Individual's Name: _____

1) Time actually worked beyond limits under this waiver: _____ to _____ on _____
Time Time Date

2) Ensure PQ&S is updated. ☐ PQ&S updated

3) Generate Condition Report.

CR Number: _____

4) Did the individual perform satisfactorily? ☐ Yes ☐ No

If no, generate separate Condition Report.

CR Number: _____

Submitted by:

_____
Supervisor Name

_____
Signature

_____ / _____
Date Time

Forward completed Attachment 9.2 Sheets 1-4 to Access Authorization / Medical

Opt In Work Hour Controls

Section 1 – Covered Work Assessment and Work History	To be completed by individual opting in to work hour controls.

Print Name/Department of Person to be opted in to work hour controls and today's date below.

_____ / _____ / _____

Name Department Date

1) Check the type of work you **WILL** perform as a covered worker.

- ☐ Operating or on-site directing the operation of risk-significant systems or components.
- ☐ Performing maintenance or on-site directing the maintenance of risk-significant structures, systems, or components.
- ☐ Performing the duties of a Radiation Protection or Chemistry technician required as part of the minimum shift complement for the on-site emergency response organization.
- ☐ Performing the duties of a Fire Brigade member responsible for understanding the effects of fire and fire suppressants on safe shutdown capability.
- ☐ Performing security duties as an armed security force officer, alarm station operator, response team leader, or watchperson.

2) Briefly describe the activities performed:

_____

_____

3) Is the work to be performed as part of a Shared Resources program?

☐ Yes ☐ No

4) Is the individual a new employee / contractor?

☐ Yes ☐ No If yes, list MyIdentity Login ID: _____

(Login is required for individual to be added to the PQ&S database)

5) List supervisor and department below.

_____ _____

Supervisor Department

*Forward completed Attachment 9.3 Sheets 1-2 to Access Authorization / Medical and Training**

** refer to step 5.1 [2] (g)*

ATTACHMENT 9.3 — OPT IN WORK HOUR CONTROLS

Sheet 2 of 2

Individual's Name: _____

6) Provide your work history of the last 9 days in order to assess circadian variation in alertness and performance using the table below where Day -1 is yesterday (or last 24 hours). Include all incidental duties performed off-site exceeding 30 minutes. (See Notes A and B)

Date:	-1	-2	-3	-4	-5	-6	-7	-8	-9
Shift schedule[1]									
Hours worked[2]									
34-hour break[3]									

[1] Record D for days, N for nights (for 12- or 10-hour shifts); D for days, S for swings, M for midnights (for 8-hour shift)
[2] Do not include both shift turnover durations for one period, only one turnover.
[3] Check the boxes of those days you have had a break of at least 34 hours before your shift.

7) Have you had a break of at least 10 hours between successive work periods every day for the past 9 days or at least 8 hours if you were transitioning between shifts?

Yes ☐ No ☐ (See Notes A and B)

8) Effective Date to begin work hour controls: _____

Section 2 – Approval and Verification of Data in PQ&S	To be completed by Supervisor for covered work hours

1) Ensure PQ&S is updated with 9-day work history.

☐ PQ&S updated (See Notes A and B)

Note: Work hour controls shall apply until Attachment 9.4 Opt Out Form is approved.

Completed by: _____ / _____ _____ / _____
Print Name Signature Date Time

[**NOTE A:** Not required for contractor personnel whose prior assignment was not at an Entergy site.]
[**NOTE B:** In lieu of required 9-day work histories, Covered Individuals may be given a 34-hour break prior to commencing work.]

*Forward completed Attachment 9.3 Sheets 1-2 to Access Authorization / Medical and Training**
** refer to step 5.1 [2] (g)*

Opt Out Work Hour Controls

Section 1 – Assessment of work and duties	To be completed by Supervisor

Print the name/department of individual to be opted out of work hour controls and today's date below.

_____ / _____ / _____

Name Department Date

1) Initial each statement below certifying the individual named above **WILL NOT** be:

_____ Operating or on-site directing the operation of risk-significant systems or components.

_____ Performing maintenance or on-site directing the maintenance of risk-significant structures, systems, or components.

_____ Performing the duties of a Radiation Protection or Chemistry technician required as part of the minimum shift complement for the on-site emergency response organization.

_____ Performing the duties of a Fire Brigade member responsible for understanding the effects of fire and fire suppressants on safe shutdown capability.

_____ Performing security duties as an armed security force officer, alarm station operator, response team leader, or watchperson.

2) Describe work duties which warrant this individual **NOT** to be under work hour controls.

_____

_____

_____

3) Is the work to be performed as part of Entergy Shared Resources program?

☐ Yes ☐ No

4) Effective Date to cease work hour controls:_____

5) Is the individual a new employee / contractor?

☐ Yes ☐ No If yes, list MyIdentity Login ID: _____

(Login is required for individual to be added to the PQ&S database)

Forward completed form to Access Authorization / Medical

ATTACHMENT 9.4 OPT OUT WORK HOUR CONTROLS

Sheet 2 of 2

Section 2 – Approval of Opt Out of work hour controls	To be completed by Supervisor

Individual's Name: _____

1) Ensure PQ&S is updated to reflect this change.

☐ PQ&S updated to document that individual is in the Opt Out population.
(N/A if the individual is not in the Covered Worker population)

Note: Individual shall not perform covered work until Attachment 9.3 Opt In Form is approved.

Completed by Supervisor:

_____ / _____ _____ / _____
Name Signature Date Time

Approved by Manager:

_____ / _____ _____ / _____
Name Signature Date Time

Forward completed form to Access Authorization / Medical

Group Opt Out Work Hour Controls

Section 1 – Assessment of work and duties	To be completed by Supervisor

Department: _____

List the names of those individuals in the above department opting out of work hour controls.

Forward completed Attachment 9.5 Sheets 1-3 to Access Authorization / Medical

ATTACHMENT 9.5 GROUP OPT OUT WORK HOUR CONTROLS

Sheet 2 of 3

1) Initial each statement below certifying the group of individuals named above **WILL NOT** be:

_____ Operating or on-site directing the operation of risk-significant systems or components.

_____ Performing maintenance or on-site directing the maintenance of risk-significant structures, systems, or components.

_____ Performing the duties of a Radiation Protection or Chemistry technician required as part of the minimum shift complement for the on-site emergency response organization.

_____ Performing the duties of a Fire Brigade member responsible for understanding the effects of fire and fire suppressants on safe shutdown capability.

_____ Performing security duties as an armed security force officer, alarm station operator or response team leader.

2) Describe work duties which warrant this group **NOT** to be under work hour controls.

_____

_____

_____

3) Is the work to be performed as part of Entergy Shared Resources program?

☐ Yes ☐ No

4) Effective Date to cease work hour controls:_____

5) Are any of the individuals new employees / contractors?

☐ Yes ☐ No If yes, include the MyIdentity Login ID for affected individuals on Sheet 1 (Login is required for individual to be added to the PQ&S database)

Forward completed Attachment 9.5 Sheets 1-3 to Access Authorization / Medical

ATTACHMENT 9.5 GROUP OPT OUT WORK HOUR CONTROLS

Sheet 3 of 3

Section 2 – Approval of Opt Out of work hour controls	To be completed by Supervisor

1) Ensure PQ&S is updated to reflect this change.

☐ PQ&S updated to document that individuals are in the Opt Out population.
(N/A for any individuals who are not in the Covered Worker population)

Note: Individuals shall not perform covered work until Attachment 9.3 Opt In Form is approved.

Completed by Supervisor:

_____ / _____ _____ / _____

Name Signature Date Time

Approved by Manager:

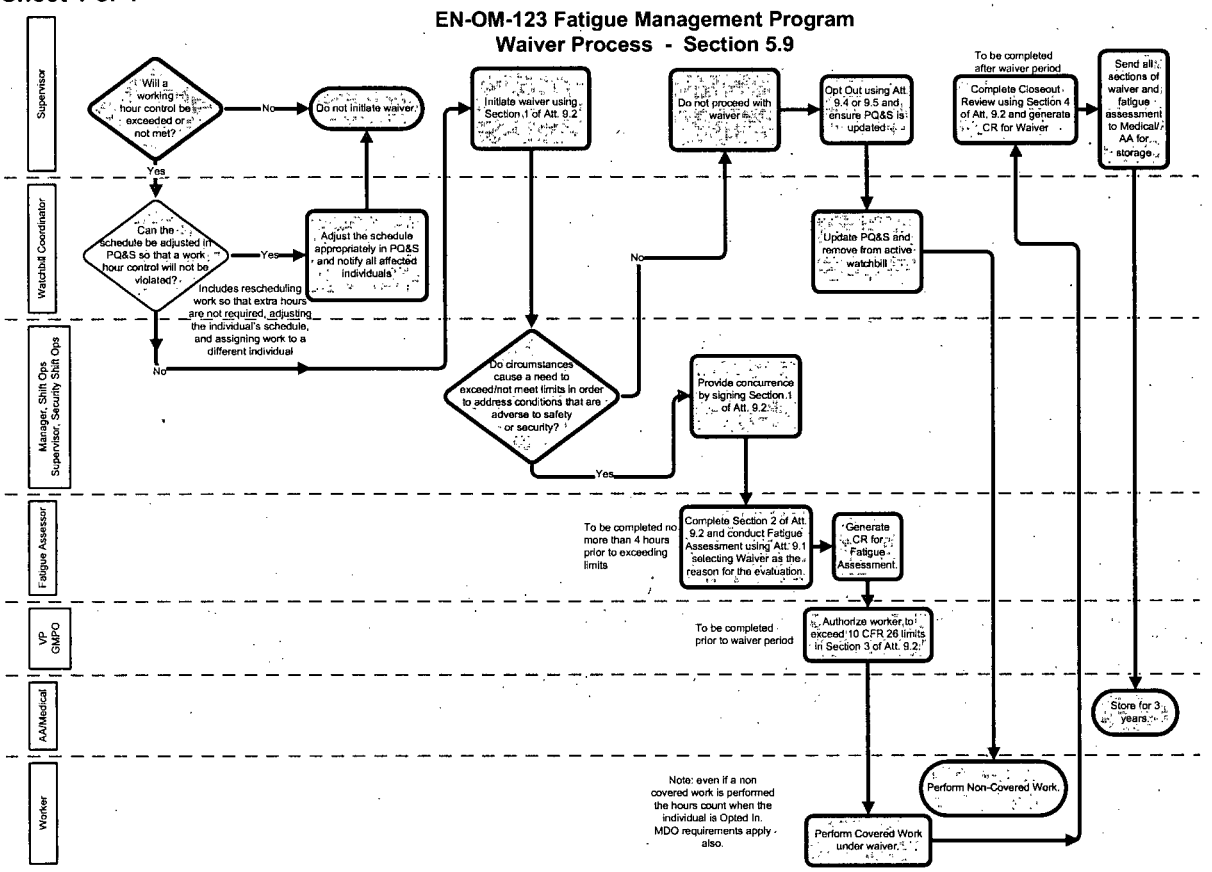
_____ / _____ _____ / _____

Name Signature Date Time

Forward completed Attachment 9.5 Sheets 1-3 to Access Authorization / Medical

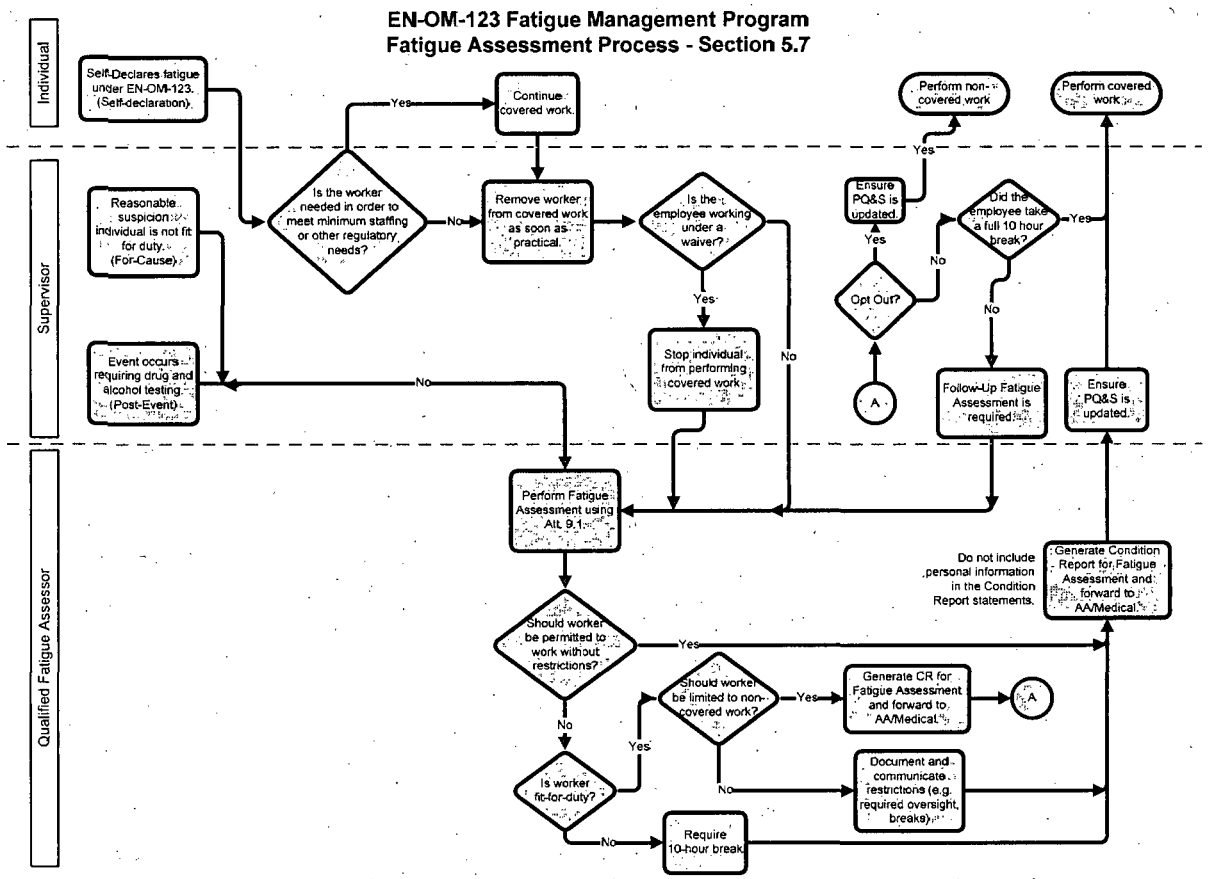
ATTACHMENT 9.6 **PROCESS OVERVIEW FLOWCHARTS**

Sheet 1 of 4



ATTACHMENT 9.6 PROCESS OVERVIEW FLOWCHARTS

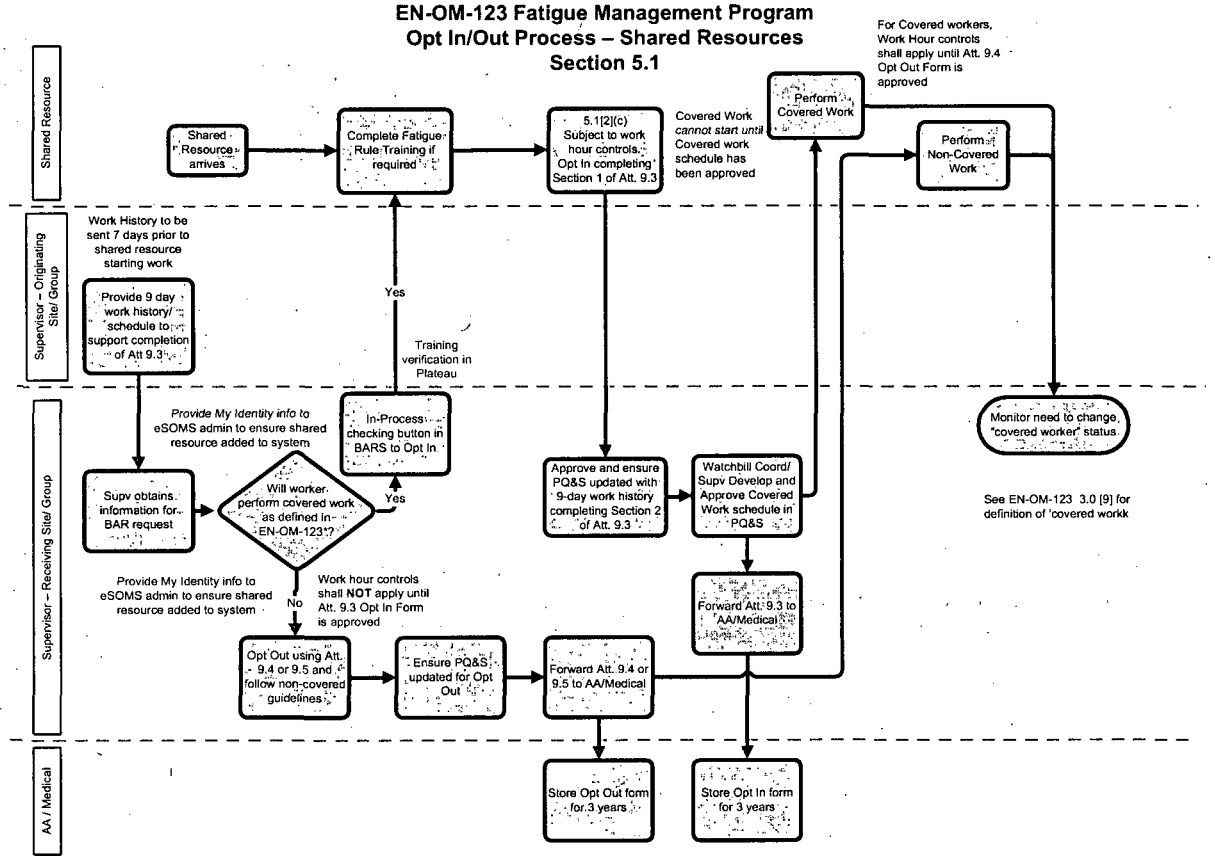
Sheet 2 of 4



ATTACHMENT 9.6 **PROCESS OVERVIEW FLOWCHARTS**

Sheet 3 of 4

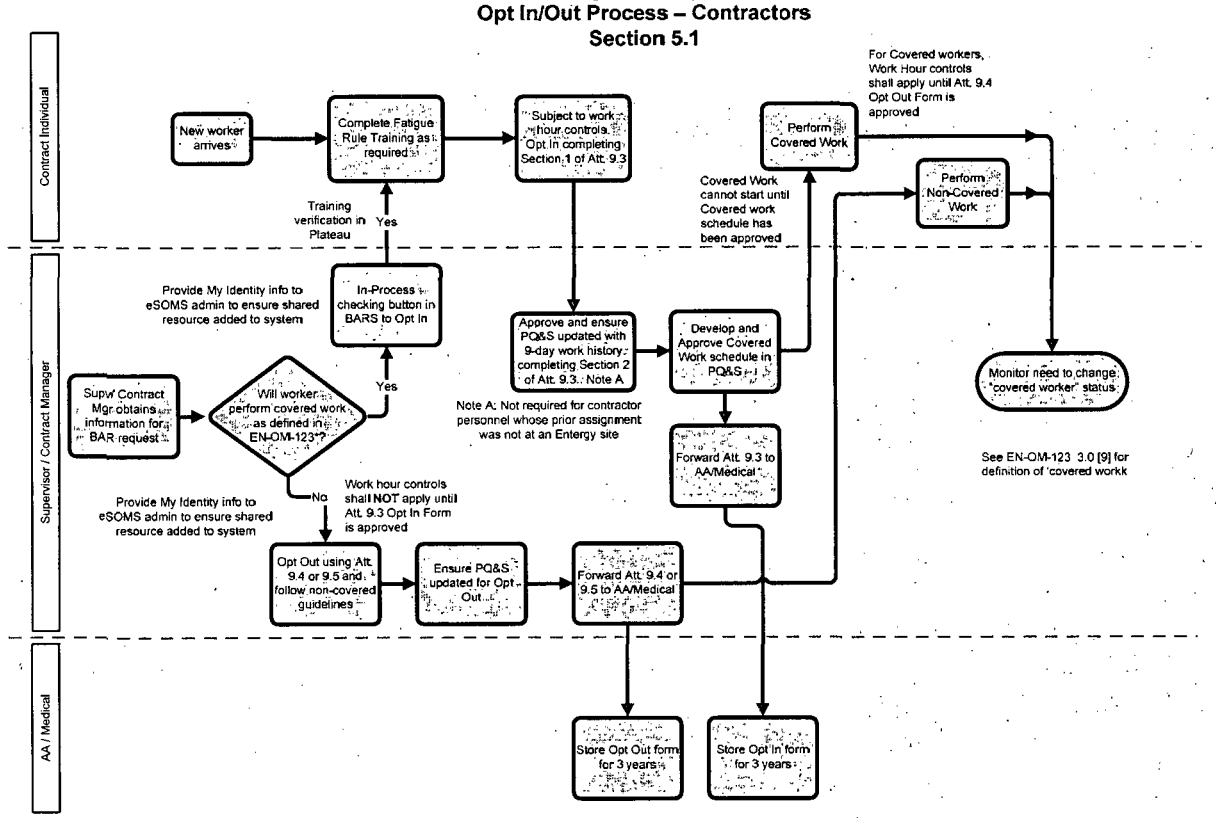
EN-OM-123 Fatigue Management Program
Opt In/Out Process – Shared Resources
Section 5.1



ATTACHMENT 9.6 **PROCESS OVERVIEW FLOWCHARTS**

Sheet 4 of 4

EN-OM-123 Fatigue Management Program
Opt In/Out Process – Contractors
Section 5.1



The following provides a typical report content and format template for the annual reviews required by 10 CFR 26.205(e) and 10 CFR 26.211(g) per steps 5.10 [2] and 5.10 [5] of this procedure.

FATIGUE MANAGEMENT PROGRAM ANNUAL EFFECTIVENESS REVIEW
SITE NAME

A. REVIEW OF WAIVERS GRANTED DURING THE ASSESSMENT PERIOD

- Complete the data in the attached Table. This is also the information that needs to be included in the FFD annual report submitted to NRC before March 1 of the following year as required by 10 CFR 26.203 (e) and 10 CFR 26.717 (e) per step 5.12 of this procedure.
- Data can be extracted from PQ&S database reports, hardcopy EN-OM-123 forms on file at AA/FFD, and through searches of PCRS.
- Provide a conclusion regarding whether the number and circumstances of the waivers seems reasonable. [See 10 CFR 26.207 and Regulatory Position C.4 of NRC Regulatory Guide 5.73, March 2009]
- Determine if any follow-up review is needed for a specific department.
- Issues requiring corrective actions that are not already planned under existing Condition Reports can be explained in Section E.

B. REVIEW OF WORKERS EXCEEDING 54-HOUR PER WEEK AVERAGE

- Tabulate or otherwise summarize the number of individuals and number of occurrences where the hours worked per week, as averaged over the shift cycle, exceeded 54-hours.
- Data can be extracted from PQ&S database reports.
- This value is not a set limit, but is treated as a performance indicator to assess whether the workforce in general or specific individuals are consistently working more than a reasonable amount of overtime.
- Determine if any follow-up review is needed for a specific department.
- Issues requiring corrective actions that are not already planned under existing Condition Reports can be explained in Section E.

C. REVIEW OF FATIGUE ASSESSMENTS PERFORMED

- Tabulate or otherwise summarize the number of fatigue assessments performed for situations other than waivers.
- There is no regulatory limit on the number to be performed. This can be used as an indicator of program factors such as the design of work schedules, recurring periods of fatigue for the work force, and specific individuals with repetitive fatigue concerns.
- Determine if any follow-up review is needed for a specific department.
- Issues requiring corrective actions that are not already planned under existing Condition Reports can be explained in Section E.

D. REVIEW OF OTHER ISSUES AS DOCUMENTED IN CONDITION REPORTS

- Perform keyword search of PCRS for Condition Reports related to fatigue rule.
- For issues not already address in topics A through C, summarize the issue and corrective actions already completed or planned.
- This could include topics such as software (PQ&S), procedure (EN-OM-123), training, and work schedules.

E. OBSERVATIONS / CONCLUSIONS REQUIRING CORRECTIVE ACTION

- Based on information described in Sections A through D conclude if the Fatigue Management Program is effective, and if not, describe the new corrective actions needs and document via a new Condition Report referencing this review and assign Corrective Actions as need for the identified issues.

F. OTHER PROPOSED IMPROVEMENTS

- Use this section to provide suggestions that could improve business processes and administrative aspects of the program. In addition to data collected for sections A through D, personnel interviews (such as Supervisors, Watchbill Coordinators, and covered workers) can be used to provide information to support quantitative and qualitative conclusions.

Prepared by: _____ Date: _____

Approved by: _____ Date: _____
(NSA Director)

ATTACHMENT 9.7 TYPICAL ANNUAL REVIEW REPORT

Sheet 3 of 4

WAIVER DISTRIBUTION BY TYPE OF LIMIT (A)

WORK HOUR LIMIT	OPERATIONS		MAINTENANCE		SECURITY		HP / RADPRO		CHEMISTRY		FIRE BRIGADE (B)	
Max ceilings:												
	Online	Outage	Online	Outage	Online	Outage	Online	Outage	Online	Outage	Online	Outage
16h max in 24h												
26h max in 48h												
72 max in 7d												
Rest Breaks:												
	Online	Outage	Online	Outage	Online	Outage	Online	Outage	Online	Outage	Online	Outage
10h between work periods												
34h in any 9-days												
Minimum Days Off – Online:												
1 MDO /wk; 8h shift												
2 MDO /wk; 10h shift												
2 MDO /wk; 12 hr shift												
2.5 MDO /wk; 12 hr shift												
3 MDO /wk; 12 hr shift												
Minimum Days Off – Outage:												
1 MDO / 7 days (rolling)												
3 MDO / 15 day period												
4 MDO / 15 day period												

NUMBER OF WAIVERS PER INDIVIDUAL EMPLOYEE (C)

NUMBER OF WAIVERS	OPERATIONS	MAINTENANCE	SECURITY	HP / RADPRO	CHEMISTRY	FIRE BRIGADE (B)
1						
2						
3						
4						
5						
6						
Highest number of waivers for an individual employee						

ATTACHMENT 9.7 TYPICAL ANNUAL REVIEW REPORT

Sheet 4 of 4

Summary of Corrective Actions (if any) taken or planned based on above data:

_____

_____

_____

_____

_____

_____

NOTES:

A. Provide the total number of instances when covered work was performed under a waiver. For example, if an individual was granted a waiver for a work period that required exceeding 26h in 48h and less than 10 hours between work periods, a '1' would be placed in each of the two applicable cells. In other words, one 'waiver' for an individual worker could count as multiple 'instances' of work hour limits waived. Do not record any instances where a waiver was granted but not subsequently used.

B. Use this column only if the waiver instances are not covered in another column. Do not double count waivers.

C. This table is used to record the number of 'waivers' (not 'instances') assigned to an individual worker.

****

Plant: _____ Data provided by: _____
Name / Dept / Date

Outage Dates: Bkr Open _____ Bkr Closed _____
(use additional lines / pages, if needed for site outage history during the reporting period)

Data source(s): check all that apply
☐ PQ&S ☐ PCRS ☐ EN-OM-123 Waiver Form ☐ Other: _____

ATTACHMENT 9.8 OVERVIEW OF RESPONSE TO EMERGENT CONDITION

Sheet 1 of 3

This Attachment provides a summary of considerations which can be used as an aid when addressing work schedules (especially for covered workers) in response to emergent work conditions. Emergent work can be associated with unplanned downpowers, unplanned scrams, and equipment degradation issues which may affect plant safety, security, or production.

> NOTE
>
> The processes and requirements of EN-OM-123 must be followed to ensure compliance with applicable regulations.

As stated in Section 5.2, work hour limits for individuals performing Covered Work consist of three concurrent components; maximum ceilings, minimum breaks, and minimum days off (MDO).

1. The maximum ceilings which apply at all times are a maximum of:
   - 16 work hours in any 24-hour period,
   - 26 work hours in any 48-hour period, and
   - 72 work hours in any 7-day period.
2. The minimum break times which apply at all times are a minimum of:
   - 10-hour break between successive work periods, except that an 8-hour break is allowed when necessary to accommodate a crew's scheduled transition between work schedules or shifts, and
   - 34-hour break in any 9-day period.
3. The MDOs are:

MDOs with the plant online			
Work Group	**8-hour shift**	**10 hour shift**	**12 hour shift**
Maintenance	1 day off per week	2 days off per week	2 days off per week
Operations Radiation Protection Chemistry Fire Brigade	1 day off per week	2 days off per week	2.5 days off per week
Security	1 day off per week	2 days off per week	3 days off per week

Optional MDOs during a plant outage for up to 60 days	
Work Group	**Days Off**
Maintenance	1 day off in any rolling 7-day period
Operations Radiation Protection Chemistry Fire Brigade	3 days off in each successive, non-rolling 15-day period
Security	4 days off in each successive, non-rolling 15-day period

ATTACHMENT 9.8 OVERVIEW OF RESPONSE TO EMERGENT CONDITION

Sheet 2 of 3

A. Initial Assessment

- Perform initial assessment of personnel resources needed to respond to the situation
  - Which departments or work groups are affected.
  - Any special skills or qualifications needed.
  - Covered or non-covered workers needed.
  - Additional supervisory resources need to cover adjustment of work crews.
  - What is the estimated duration of the emergent condition.
- Determine if schedule changes are needed for the required resources to support the response to the situation.
- Ensure that PQ&S watchbill coordinators are available to obtain work hour history, determine existing margin to limits, and make schedule adjustments.
- Make immediate schedule adjustments, if needed, to support the initial response effort
  - Early release of some workers so that they are available to return more quickly for a modified schedule.
  - Holdover of other workers to provide extended Day One coverage.
- Identify potential gaps that may need fleet shared resources or contractor support.
- Determine if the situation meets criteria for waivers.
  - For security conditions, review the situation with the Security Manager.
  - For conditions involving safe plant operations, review the situation with the Operations Manager.

NOTE

Per EN-OM-123, Definition 3.0 [6]: "Condition Adverse to Safety or Security" refers to situations in which a licensee-approved waiver of work hour controls is permitted. This includes, but is not limited to, being able to comply with other NRC regulations, recovering equipment necessary for plant safety or security, preventing a forced plant shutdown or power reduction, and preventing a condition adverse to industrial or environmental safety.

B. Schedule adjustments based on waivers

- Work with watchbill coordinators to design new schedules for required resources.
- Follow labor agreement requirements, as applicable, to populate the new schedules.
- Based on PQ&S data, identify personnel and dates when limits are exceeded.
- Ensure that qualified fatigue assessors are available at required times to support face-to-face fatigue assessments (Fatigue Assessments must be performed during the 4-hour window prior to exceeding limits).
- Ensure that required Condition Reports, PQ&S Fatigue Tracking Records, and EN-OM-123 Waiver and Fatigue Assessment forms are completed.

C. Schedule adjustments with no waivers

- Work with watchbill coordinators to design new schedules for required resources.
- Follow labor agreement requirements, as applicable, to populate the new schedules.
- Based on PQ&S data, identify personnel and dates when limits are exceeded.
- Obtain additional resources and/or adjust work schedules to ensure that limits are not exceeded for covered work.
- Determine if work scope can be categorized as non-covered work. If so, obtain additional non-covered workers. Consider transition of existing covered workers to non-covered status.
- Be aware of potential schedule impacts due to rest period requirements for transition of non-covered workers to covered worker status.

REQUEST/APPROVAL PAGE

SAFETY RELATED
PROCEDURE

Normal Review Class *(check one)*:
☒ **OSRC**
☐ **QUALIFIED REVIEW**

PROCEDURE NUMBER:	EP-001-001	REVISION:	025
TITLE:	Recognition and Classification of Emergency Conditions		
PROCEDURE OWNER (Position Title):	Emergency Planning Manager		
TERM (check one):	☒ **PERMANENT** ☐ **TEMPORARY**		
Effective Date / Milestone (if applicable):	03/31/10		
Expiration Date / Milestone (if applicable):	N/A		

PROCEDURE ACTION (check one):
☒ Revision ☐ Deletion ☐ New Procedure

DESCRIPTION AND JUSTIFICATION:

(1) Revised security event related EALs to incorporate NEI 99-01 Revision 5 security event related EALs in their entirety to support Security Department implementation of NEI 03-12 Revision 6 in accordance with NRC generated EAL FAQ 2009-48.
(2) Changed the title of "Duty Plant Manager" to "TSC duty Emergency Coordinator" in sections 3.3 and 3.4 to correspond to a title change in the Emergency Plan.

☐ Request/Approval Page Continuation Sheet(s) attached.

REVIEW PROCESS (check one): ☒ Normal ☐ Editorial Correction (Revisions only) ☐ Technical Verification (Revisions only)

REVIEW AND APPROVAL ACTIVITIES				PRINT NAME OR SIGNATURE	DATE
PREPARER				J.J. Lewis	03/08/10
EC SUPERVISOR	Administrative Review and Approval			(sign) N/A	
CROSS-DISCIPLINE and INTERNAL REVIEWS (List Groups, Functions, Positions, etc.)				N/A	
				N/A	
				N/A	
				N/A	
				N/A	
PROCESS APPLICABILITY DETERMINATION	Performed ☐	PA Exclusion ☒		OSRC meeting 03-003	
TECHNICAL	Review ☒	Verification ☐		R.J. Perry	3/17/10
QUALIFIED REVIEWER	Review ☐			N/A	
GROUP/DEPT. HEAD	Review ☒	Approval ☐		(sign) G.L. Fey/	3/18/10
GM, PLANT OPERATIONS	Review ☐	Approval ☒		(sign)	3/30/10
VICE PRESIDENT, OPERATIONS		Approval ☐		(sign) N/A	

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2.0 REFERENCES ---------- **2**
3.0 RESPONSIBILITIES ---------- **3**
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LIST OF EFFECTIVE PAGES

1-144 Revision 025

Reference Use

1.0 PURPOSE

1.1 This procedure describes the immediate actions to be taken to recognize and classify the four emergency classifications: Unusual Event, Alert, Site Area Emergency, and General Emergency.

2.0 REFERENCES

2.1 Waterford 3 SES Emergency Plan

2.2 Title 10, Code of Federal Regulations Part 50, Appendix E

2.3 NEI 99-01 Methodology for Development of Emergency Action Levels

2.4 Waterford 3 SES Final Safety Analysis Report

2.5 EP-001-010, Unusual Event

2.6 EP-001-020, Alert

2.7 EP-001-030, Site Area Emergency

2.8 EP-001-040, General Emergency

2.9 EP-002-015, Emergency Responder Activation

2.10 EP-002-052, Protective Action Guidelines

2.11 EP-002-150, Emergency Plan Implementing Records

2.12 EP-004-010, Toxic Chemical Contingency Procedure

2.13 NUREG-1022, Event Reporting Guidelines: 10CFR50.72 and 50.73

2.14 UNT-006-010, Event Notification and Reporting

2.15 HP-CALC-2001-001, PASS System Elimination (Dose Rates Calculation)

2.16 HP-CALC-2005-002, Emergency Action Levels (EALs) (Abnormal Rad Levels and Radiological Effluent) Based on Power Uprate Source Terms

2.17 NRC Bulletin 2005-02, Emergency Preparedness and Response Actions for Security-Based Events

3.0 RESPONSIBILITIES

3.1 The Emergency Coordinator (EC) is responsible for implementation of this procedure

3.2 The Emergency Coordinator (EC) is responsible for declaration of the appropriate emergency classification whenever, in his judgment, the station status warrants such a declaration.

3.3 The Shift Manager shall assume the responsibility and authority of the Emergency Coordinator (EC) until such time that he is properly relieved of this duty by the TSC Duty Emergency Coordinator.

3.4 If the Shift Manager cannot immediately assume the duty of Emergency Coordinator, then the Control Room Supervisor (CRS) shall assume the duty of Emergency Coordinator until properly relieved by the TSC Duty Emergency Coordinator or Shift Manager.

3.5 When the EOF is activated and responsibilities are transferred, then the EOF Director is responsible for implementation of this procedure and declaration of the appropriate emergency classification whenever, in his judgment, the station status warrants such a declaration.

4.0 INITIATING CONDITIONS

4.1 An off-normal event has occurred or is in progress.

> **NOTE**
>
> This instruction does not replace any plant operating procedure. Ensure that any immediate actions (for example, use of Emergency Procedures) are taken for the proper operation of the plant. During an emergency condition, continue to use the appropriate plant procedures in parallel with this instruction.

4.2 An action step in a plant procedure refers to this instruction for classification of the indicated plant conditions.

5.0 PROCEDURE

5.1 Definitions

5.1.1 Emergency Class - One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping off-normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time-sensitive onsite and off-site radiological emergency preparedness actions necessary to respond to such conditions. The existing radiological emergency classes, in ascending order of seriousness, are called: Notification of Unusual Event (Unsual Event), Alert, Site Area Emergency, and General Emergency.

5.1.2 Initiating Condition (IC) - One of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency, or such an emergency has occurred.

5.1.3 Emergency Action Level (EAL) - A pre-determined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

5.2 Classification

5.2.1 Verify the off-normal event to ensure that the event is real.

5.2.2 Match the off-normal event with one of the following five emergency categories:

5.2.2.1	Abnormal Radiation Levels/Radiological Effluents	TAB A
5.2.2.2	Cold Shutdown/Refueling System Malfunction	TAB C
5.2.2.3	Fission Product Barrier Degradation	TAB F
5.2.2.4	Hazards and Other Conditions Affecting Plant Safety	TAB H
5.2.2.5	System Malfunction	TAB S

5.2.3 Refer to Attachment 7.1, Emergency Categories, under the category TAB selected in step 5.2.2 above, match the off-normal condition with the appropriate IC to determine the emergency classification.

5.2.4 If an event or condition existed which met or exceeded an IC but no emergency was declared and the basis for the emergency classification no longer exists at the time of the discovery (rapidly concluded event, missed classification or misclassified event), then do not classify the emergency or make offsite notifications.

5.2.4.1 Notify the NRC within one hour of the discovery of the undeclared or misclassified event in accordance with UNT-006-010.

NOTE

The effects of combinations of initiating conditions that individually constitute a lower classification may be considered as a possibly higher emergency classification.

5.2.5 Declare the highest emergency classification for which an IC has been met or exceeded.

5.2.6 Perform the emergency actions in accordance with the appropriate Emergency Plan Implementing Instruction, one of which is provided for each classification, as follows:

5.2.6.1 Unusual Event - EP-001-010

5.2.6.2 Alert - EP-001-020

5.2.6.3 Site Area Emergency - EP-001-030

5.2.6.4 General Emergency - EP-001-040

5.2.7 Assessment actions shall be continued, and if necessary, the emergency classification escalated (or downgraded) as more definitive information becomes available or if the plant conditions change.

6.0 FINAL CONDITIONS

6.1 The plant conditions which activated this instruction have been declassified to non-emergency status.

7.0 ATTACHMENTS

7.1 Emergency Categories

Index of Initiating Conditions

TAB A	Abnormal Radiation Levels/Radiological Effluents
TAB C	Cold Shutdown/Refueling System Malfunction
TAB F	Fission Product Barrier Degradation
TAB H	Hazards and Other Conditions Affecting Plant Safety
TAB S	System Malfunction

7.2 Waterford 3 EAL Basis Document

8.0 RECORDS

None

INDEX OF INITIATING CONDITIONS

TAB A ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

1. Unplanned releases of gaseous or liquid radioactivity to the environment
2. Unexpected rise in plant radiation/damage to irradiated fuel/loss of water level
3. Release of radioactive material or rise in radiation levels within the facility that impedes operation of systems required to maintain safe operation

TAB C COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

1. RCS Leakage/loss of reactor vessel inventory
2. Loss of RCS inventory/loss of reactor vessel inventory
3. Loss of decay heat removal capability with irradiated fuel in the reactor vessel
4. Loss of offsite/onsite AC power
5. Unplanned loss of required DC power
6. Inadvertent criticality
7. Loss of onsite or offsite communications

TAB F FISSION PRODUCT BARRIER DEGRADATION

1. Loss of Containment, RCS, or Fuel Clad barrier(s)

TAB H HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

1. Security
2. Judgment
3. Control Room evacuation
4. Fire or explosion
5. Toxic or flammable gases
6. Natural and destructive phenomena

TAB S SYSTEM MALFUNCTION

1. Loss of offsite/onsite AC power (No IC number 2)
3. Failure of Reactor Protection System
4. Loss of Vital DC power
5. Complete loss of heat removal capability
6. Loss of safety system annunciators/indicators
7. RCS Leakage
8. Loss of onsite or offsite communications
9. Fuel clad degradation
10. Inadvertent criticality
11. Inability to reach required shutdown within Tech Spec limits

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

Radiological Effluents

GENERAL EMERGENCY

AG1 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. 1 2 3 4 5 6 D

Emergency Action Level(s): (1 or 2 or 3)

NOTE: *If dose assessment results are available at the time of declaration, then the classification should be based on EAL #2 instead of EAL #1. While necessary declarations should not be delayed awaiting results, the dose assessment should be initiated / completed in order to more accurately characterize the nature of the release.*

1. VALID reading on one or more of the following radiation monitors that exceeds or is expected to exceed the reading shown for ≥ 15 minutes:
   - CONDENSER EXHAUST WRGM (PRM-IRE-0002, RE0002-4) indicates release rate > 2.69E+09 uCi/sec
   - FUEL HANDLING BUILDING EXHAUST WRGM (PRM-IRE-3032, RE3032-4) indicates release rate > 1.75E+09 uCi/sec
   - PLANT STACK WRGM (PRM-IRE-0110, RE0110-4) indicates release rate > 2.55E+09 uCi/sec

OR

2. Dose assessment using actual meteorology indicates doses > 1000 mR TEDE or > 5000 mR CDE Thyroid at or beyond the EAB.

OR

3. Field survey results indicate closed window dose rates >1000 mR/hr expected to continue for > one hour; or analyses of field survey samples indicate CDE Thyroid ≥ 5000 mR for one hour of inhalation, at or beyond the EAB.

SITE AREA EMERGENCY

AS1 Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 100 mR TEDE or 500 mR CDE Thyroid for the actual or projected duration of the release. 1 2 3 4 5 6 D

Emergency Action Level(s): (1 or 2 or 3)

NOTE: *If dose assessment results are available at the time of declaration, then the classification should be based on EAL #2 instead of EAL #1. While necessary declarations should not be delayed awaiting results, the dose assessment should be initiated / completed in order to determine if the classification should be subsequently escalated.*

1. VALID reading on one or more of the following radiation monitors that exceeds or is expected to exceed the reading shown for ≥ 15 minutes:
   - CONDENSER EXHAUST WRGM (PRM-IRE-0002, RE0002-4) indicates release rate > 2.69E+08 uCi/sec
   - FUEL HANDLING BUILDING EXHAUST WRGM (PRM-IRE-3032, RE3032-4) indicates release rate > 1.75E+08 uCi/sec
   - PLANT STACK WRGM (PRM-IRE-0110, RE0110-4) indicates release rate > 2.55E+08 uCi/sec

OR

2. Dose assessment using actual meteorology indicates doses > 100 mR TEDE or > 500 mR CDE Thyroid at or beyond the EAB.

OR

3. Field survey results indicate closed window dose rates >100 mR/hr expected to continue for > one hour; or analyses of field survey samples indicate CDE Thyroid ≥ 500 mR for one hour of inhalation, at or beyond the EAB.

ALERT

AA1 Any UNPLANNED release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological effluent ODCM limits for ≥ 15 minutes. 1 2 3 4 5 6 D

Emergency Action Level(s): (1 or 2 or 3)

1. VALID reading on any effluent monitor that exceeds 200 times the alarm setpoint established by a current radioactivity discharge permit for ≥ 15 minutes.

OR

2. VALID reading on one or more of the following radiation monitors that exceeds the reading shown for ≥ 15 minutes:

MONITOR	CONC.	EFFLUENT RATE
CONDENSER EXHAUST WRGM PRM-IRE-0002, RE0002-4		1.51E+07 uCi/sec
FUEL HANDLING BUILDING EXHAUST WRGM, PRM-IRE-3032, RE3032-4		2.25E+07 uCi/sec
PLANT STACK WRGM PRM-IRE-0110, RE0110-4		1.51E+07 uCi/sec

OR

3. Confirmed grab sample analyses for gaseous or liquid releases indicates concentrations or release rates, with a release duration of ≥ 15 minutes, in excess of 200 times ODCM based limits from the Technical Requirements Manual (TRM) (Table A1).

Table A1
TRM Limits

	ALERT	UE
Gaseous Release		
Noble Gases: ≤ 500 mrem/yr whole body	1.00E+05	1000
Noble Gases: ≤ 3000 mrem/yr skin	6.00E+05	6000
I-131, I-133, H-3 and particulates with half-lives > 8 days: ≤ 1500 mrem/year to any organ	3.00E+05	3000
Liquid Release		
Whole body: < 1.50 mrem/quarter	300	3
< 3 mrem/yr	600	6
Any Organ: < 5 mrem/quarter	1000	10
< 10 mrem/yr	2000	20

UNUSUAL EVENT

AU1 Any UNPLANNED release of gaseous or liquid radioactivity to the environment that exceeds 2 times the radiological effluent ODCM limits for ≥ 60 minutes. 1 2 3 4 5 6 D

Emergency Action Level(s): (1 or 2 or 3)

1. VALID reading on any effluent monitor that exceeds 2 times the alarm setpoint established by a current radioactivity discharge permit for ≥ 60 minutes.

OR

2. VALID reading on one or more of the following radiation monitors that exceeds the reading shown for ≥ 60 minutes:

MONITOR	CONC.	EFFLUENT RATE
CONDENSER EXHAUST WRGM PRM-IRE-0002, RE0002-4		1.51E+05 uCi/sec
FUEL HANDLING BUILDING EXHAUST PIG, GAS CHANNEL , PRM-IRE-5107A or B, RE5107A-1 or RE5107B-1	1.61E-02 uCi/cc	
FUEL HANDLING BUILDING EXHAUST WRGM, PRM-IRE-3032, RE3032-4		2.25E+05 uCi/sec
PLANT STACK PIG GAS CHANNEL PRM-IRE-0100.1S or 2S, RE0100.1-1 or RE0100.2-1	3.45E-03 uCi/cc	
PLANT STACK WRGM PRM-IRE-0110, RE0110-4		1.51E+05 uCi/sec
[1]DRY COOLING TOWER SUMPS MONITOR, PRM-IRE-6775 or PRM-IRE-6776, RE6775-1 or RE6776-1	8.49E-04 uCi/ml	
[1]TURBINE BUILDING INDUSTRIAL WASTE SUMP MONITOR, PRM-IRE-6778, RE6778-1	8.49E-04 uCi/ml	

[1]Monitor reading not applicable if sump discharge is aligned to circulating water discharge.

OR

3. Confirmed grab sample analyses for gaseous or liquid releases indicates concentrations or release rates, with a release duration of ≥ 60 minutes, in excess of 2 times ODCM based limits from the Technical Requirements Manual (TRM) (Table A1).

Plant Modes (white boxes indicate applicable modes) 1 Power Operations 2 Startup 3 Hot Standby 4 Hot Shutdown 5 Cold Shutdown 6 Refueling D Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

Abnormal Radiation Levels

AA2 Damage to irradiated fuel or loss of water level that has or will result in uncovering of irradiated fuel outside the reactor vessel. [1 2 3 4 5 6 D]

Emergency Action Level(s): (1 or 2)

1. VALID alarm or reading ≥ HIGH alarm limits on one or more of the following radiation monitors:
   - CONTAINMENT AREA RADIATION MONITORS (PURGE ISOLATION), (ARM-IRE-5024S, 5025S, 5026S OR 5027S, RE5024-1, RE5025-1, RE5026-1 OR RE5027-1) ≥ HIGH alarm
   - CONTAINMENT +46 STAIRS MONITORS, (ARM-IRE-5014 OR 5015, RE5014-1 OR RE5015-1) ≥ HIGH alarm
   - REFUELING BRIDGE AREA RADIATION MONITOR (ARM-IRE-5013, RE5013-1) ≥ HIGH alarm
   - *FHB AREA RADIATION MONITORS (ISOLATION)*, (ARM-IRE-0300.1S, .2S, .3S OR .4S, RE0300.1-1, RE0300.2-1, RE0300.3-1, OR RE0300.4-1) ≥ 1000 mR/hr
   - FUEL HANDLING BUILDING EXHAUST PIG, GAS CHANNEL , PRM-IRE-5107A OR B, RE5107A-1 OR RE5107B-1 ≥ HIGH alarm

OR

2. Valid indication of uncontrolled water level drop in the reactor refueling cavity, spent fuel pool or fuel transfer canal that will result in irradiated fuel uncovering.

AU2 Unexpected rise in plant radiation. [1 2 3 4 5 6 D]

Emergency Action Level(s): (1 or 2)

1. a. VALID indication of uncontrolled water level drop in the reactor refueling cavity, spent fuel pool, or fuel transfer canal with all *irradiated fuel assemblies remaining covered by* water.
   - Level drop may be indicated by personnel observation, spent fuel pool level below level plate, refueling crew report, indication on area security camera, RWSP level drop due to makeup demands.

AND

   b. Unplanned VALID Area Radiation Monitor rise on any of the following:
   - CONTAINMENT AREA RADIATION MONITORS (PURGE ISOLATION), (ARM-IRE-5024S, 5025S, 5026S OR 5027S, RE5024-1, RE5025-1, RE5026-1 OR RE5027-1)
   - CONTAINMENT +46 STAIRS MONITORS, (ARM-IRE-5014 OR 5015, RE5014-1 OR RE5015-1)
   - REFUELING BRIDGE AREA RADIATION MONITOR (ARM-IRE-5013, RE5013-1)
   - FHB AREA RADIATION MONITORS (ISOLATION), (ARM-IRE-0300.1S, .2S, .3S OR .4S, RE0300.1-1, RE0300.2-1, RE0300.3-1, OR RE0300.4-1)

OR

2. Unplanned VALID Area Radiation Monitor readings indicate a rise in plant radiation levels by a factor of 1000 over normal levels (highest reading in the past 24 hours excluding the current peak value).

Table A2
Radiation Levels in Areas Requiring Infrequent Access

VCT Room – 10 R/hr	Safeguards Rooms – 10 R/hr
VALUE FOR ALL AREAS BELOW IS 2.5 R/hr:	
+46 Chiller Area	BAM Tank Rooms
MSIV Areas	Relay Room
Electrical Penetration Area	Remote Shutdown Room
EDG Rooms	Battery Rooms
Valve Bay	Wing Areas
CVC-507 Valve Area	CCW Heat Exchanger Rooms
CCW Pump Rooms	

AA3 Release of radioactive material or rise in radiation levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown. [1 2 3 4 5 6 D]

Emergency Action Level(s): (1 or 2)

1. VALID radiation level > 15 mR/hr in areas requiring continuous occupancy to maintain plant safety functions.
   - Main Control Room Area Radiation Monitor (ARM-IRE- 5001, RE5001-1) > 15 mR/hr
   - Radiation level in CAS >15 mR/hr

OR

2. VALID radiation level > Table A2 value in plant vital areas requiring infrequent access to maintain plant safety functions (Table A2).

Plant Modes (white boxes indicate applicable modes [1] **Power Operations** [2] **Startup** [3] **Hot Standby** [4] **Hot Shutdown** [5] **Cold Shutdown** [6] **Refueling** [D] **Defueled**

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION				
Cold Shutdown Loss of RCS Inventory	**CG1** Loss of reactor vessel inventory affecting fuel clad integrity with containment challenged with irradiated fuel in the reactor vessel. 5 6 **Emergency Action Level(s):** (1 and 2 and 3) 1. Loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise **AND** 2. Reactor vessel level cannot be monitored with indication of core uncovery > 30 minutes as evidenced by one or more of the following: • Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) ≥ 10R/hr • Erratic Source Range Monitor indication • Core Exit Thermocouples indicate superheat **AND** 3. Indication of CONTAINMENT challenged as indicated by one or more of the following: • Explosive mixture inside containment • Containment pressure > 50 PSIA • CONTAINMENT CLOSURE not established.	**CS1** Loss of reactor vessel inventory affecting core decay heat removal capability. 5 **Emergency Action Level(s):** (1 or 2) 1. With CONTAINMENT CLOSURE not established: a. Reactor vessel inventory as indicated by RVLMS upper plenum level 0% **OR** b. Reactor vessel level cannot be monitored > 30 minutes with a loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise **OR** 2. With CONTAINMENT CLOSURE established: Reactor vessel level cannot be monitored > 30 minutes with a loss of reactor vessel inventory as indicated by either: • Unexplained containment sump or reactor drain tank level rise. • Erratic Source Range Monitor indication.	**CA1** Loss of RCS inventory. 5 **Emergency Action Level(s):** (1 or 2) 1. Loss of RCS inventory as indicated by RVLMS upper plenum level ≤ 20% **OR** 2. a. Loss of RCS inventory as indicated by unexplained containment sump level or reactor drain tank level rise **AND** b. RCS level cannot be monitored > 15 minutes.	**CU1** RCS leakage. 5 **Emergency Action Level(s):** (1 or 2) 1. Unidentified or pressure boundary leakage > 10 gpm. **OR** 2. Identified leakage > 25 gpm.
Refueling Loss of RCS Inventory		**CS2** Loss of reactor vessel inventory affecting core decay heat removal capability with irradiated fuel in the reactor vessel. 6 **Emergency Action Level(s):** 1. Reactor vessel level cannot be monitored WITH indication of core uncovery as evidenced by one or more of the following: • Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) ≥ 10R/hr • Erratic Source Range Monitor indication • Core Exit Thermocouples indicate superheat.	**CA2** Loss of reactor vessel inventory with irradiated fuel in the reactor vessel. 6 **Emergency Action Level(s):** (1 or 2) 1. Loss of reactor vessel inventory as indicated by reactor vessel level at 12 ft. **OR** 2. a. Loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise **AND** b. Reactor vessel level cannot be monitored > 15 minutes.	**CU2** UNPLANNED loss of RCS inventory with irradiated fuel in the reactor vessel. 6 **Emergency Action Level(s):** (1 or 2) 1. UNPLANNED RCS level drop below the vessel flange for ≥ 15 minutes **OR** 2. a. Loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise **AND** b. Reactor vessel level cannot be monitored.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION			
Loss of Decay Heat Removal		**CA3** Inability to maintain plant in Cold Shutdown with irradiated fuel in the reactor vessel. 5 6 **Emergency Action Level(s):** (1 or 2 or 3) 1. With CONTAINMENT CLOSURE and RCS integrity not established, an UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit **OR** 2. With CONTAINMENT CLOSURE established and RCS integrity not established, or RCS inventory reduced, an UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit for > 20 minutes[1] **OR** 3. An UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit for > 60 minutes[1] or results in an RCS pressure rise of > 10 psig. *[1]Note: **If** shutdown cooling is in operation within this time frame **and** RCS temperature is being reduced **then** this EAL is **not** applicable.*	**CU3** UNPLANNED loss of decay heat removal capability with irradiated fuel in the reactor vessel. 5 6 **Emergency Action Level(s):** (1 or 2) 1. An UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit **OR** 2. Loss of all RCS temperature and reactor vessel level indication for > 15 minutes.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION (cont.)			
Loss of Power		**CA5** Loss of all offsite power and loss of all onsite AC power to essential busses. [ ][ ][ ][5][6][D] **Emergency Action Level(s):** 1. a. Loss of power to all unit auxiliary and startup transformers **AND** b. Failure of the 'A' and 'B' emergency diesel generators to supply power to emergency busses **AND** c. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss of both offsite and onsite AC power.	**CU5** Loss of all offsite power to essential busses > 15 minutes. [ ][ ][ ][5][6][ ] **Emergency Action Level(s):** 1. a. Loss of power to all unit auxiliary and startup transformers > 15 minutes **AND** b. At least emergency diesel generator 'A" or 'B' is supplying power to emergency busses.
Loss of DC Power			**CU6** UNPLANNED loss of required DC power > 15 minutes. [ ][ ][ ][5][6][ ] **Emergency Action Level(s):** 1. a. UNPLANNED loss of vital DC power to required DC busses based on bus voltage indication < 108 volts **AND** b. Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.
Inadvertent Criticality			**CU7** Inadvertent criticality. [ ][ ][ ][5][6][ ] **Emergency Action Level(s):** 1. An UNPLANNED sustained positive startup rate observed on nuclear instrumentation.

Plant Modes (white boxes indicate applicable modes) [1] **Power Operations** [2] **Startup** [3] **Hot Standby** [4] **Hot Shutdown** [5] **Cold Shutdown** [6] **Refueling** [D] **Defueled**

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION (cont.)

Loss of Communications

Table C1 Onsite Communications Equipment
Plant radio system
Plant paging system
In-plant telephones
Sound powered phones

Table C2 Offsite Communications Equipment
All telephone lines (commercial and microwave)
Industrial Hot Line
ENS
Civil Defense Radios
Operational Hotline

CU8 UNPLANNED loss of all onsite or offsite communications capabilities.

5 6

Emergency Action Level(s): (1 or 2)

1. Loss of all Table C1 onsite communications systems affecting the ability to perform routine operations

OR

2. Loss of all Table C2 offsite communications systems.

Plant Modes (white boxes indicate applicable modes) 1 Power Operations 2 Startup 3 Hot Standby 4 Hot Shutdown 5 Cold Shutdown 6 Refueling D Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
FISSION PRODUCT BARRIER DEGRADATION			
FG1 Loss of ANY two Barriers AND Loss or Potential Loss of Third barrier.	**FS1** Loss or Potential Loss of ANY two Barriers.	**FA1** ANY loss or ANY Potential Loss of EITHER Fuel Clad or RCS.	**FU1** ANY loss or ANY Potential Loss of Containment.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

***Note:** Determine which combination of the three barriers are lost or have a potential loss and use the above key to classify the event.* **Also an event or multiple events could occur which result in the conclusion that exceeding the loss or potential loss thresholds is imminent (i.e., within 1 to 2 hours). In this imminent loss situation use judgment and classify as if the thresholds are exceeded.**

SEE FOLLOWING PAGE FOR EALS FOR BARRIER LOSS AND POTENTIAL LOSS

Fuel Clad Barrier EALs

LOSS	POTENTIAL LOSS
1. Primary Coolant Activity Level (FCB1)	
RCS Dose Equivalent Iodine > 300 µCi/gm as indicated by: a. Dose Rate at one foot from Primary Sample Panel > 950 mR/hr OR b. -4 RAB RADIOCHEMISTRY LAB area radiation monitor (ARM-IRE-5020) > 125 mR/hr OR c. Chemistry sample results	Not Applicable
2. Core Exit Thermocouple Readings (FCB2)	
≥ 1200 degrees F	≥ 700 degrees F
3. Reactor Vessel Water Level (FCB3)	
Not applicable.	RVLMS upper plenum level 0%.
4. Containment Radiation Monitoring (FCB4)	
Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) > 1000 R/hr.	Not Applicable
5. Emergency Coordinator/EOF Director Judgment (FCB5)	
Any condition in the opinion of the Emergency Coordinator/EOF Director that indicates Loss or Potential Loss of the Fuel Clad barrier.	

RCS Barrier EALs

LOSS	POTENTIAL LOSS
1. RCS Leak Rate (RCB1)	
GREATER THAN available makeup capacity as indicated by RCS subcooling < 28° F.	Unisolable RCS leak > 44 gpm.
2. SG Tube Rupture (RCB2)	
SGTR that results in an ECCS (SI) actuation.	Not Applicable
3. Containment Radiation Monitoring (RCB3)	
Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) > 100 R/hr.	Not Applicable
4. Other Indications (RCB4)	
Not Applicable	RCS pressure dropping due to primary relief not reseating
5. Emergency Coordinator/EOF Director Judgment (RCB5)	
Any condition in the opinion of the Emergency Coordinator/EOF Director that indicates Loss or Potential Loss of the RCS barrier.	

Containment Barrier EALs

LOSS	POTENTIAL LOSS
1. Containment Pressure (CNB1)	
a. Rapid unexplained drop following initial rise OR b. Containment parameters not consistent with LOCA conditions	a. Containment pressure 50 PSIA and rising OR b. Explosive mixture exists OR c. Containment pressure > 17.7 PSIA with LESS THAN one full train of Containment Spray operating (1750 gpm)
2. Core Exit Thermocouple Readings (CNB2)	
Not Applicable	Core exit thermocouples >1200 degrees F and restoration procedures not effective within 15 minutes OR Core exit thermocouples > 700 degrees F with RVLMS upper plenum level equal to 0% or LOWER and restoration procedures not effective within 15 minutes
3. SG Secondary Side Release With Primary-to-Secondary Leakage (CNB3)	
Ruptured S/G is also faulted outside of containment OR Primary-to-Secondary leakrate >10 gpm with nonisolable steam release from affected S/G to the environment	Not Applicable
4. Containment Isolation Valve Status After Containment Isolation (CNB4)	
Unisolable breach of containment with a direct release path to the environment following containment isolation actuation.	Not Applicable
5. Significant Radioactive Inventory in Containment (CNB5)	
Not Applicable	Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) > 4000 R/hr.
6. Emergency Coordinator/EOF Director Judgment (CNB6)	
Any condition in the opinion of the Emergency Coordinator/EOF Director that indicates Loss or Potential Loss of the Containment barrier.	

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY				
Security	**HG1** HOSTILE ACTION resulting in loss of physical control of the facility. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions. OR 2. A HOSTILE ACTION has caused failure of Spent Fuel Cooling Systems and IMMINENT fuel damage is likely for a freshly off-loaded reactor core in pool.	**HS1** HOSTILE ACTION within the PROTECTED AREA. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Waterford 3 Security Shift Supervision.	**HA1** HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Waterford 3 Security Shift Supervision OR 2. A validated notification from NRC of an airliner attack threat within 30 minutes of the site.	**HU1** Confirmed SECURITY CONDITION or threat which indicates a potential degradation in the level of safety of the plant. 1 2 3 4 5 6 D **Emergency Action Level(s):** (1 or 2 or 3) 1. A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Waterford 3 Security Shift Supervision OR 2. A credible site specific security threat notification OR 3. A validated notification from NRC providing information of an aircraft threat.
Discretionary	**HG2** Other conditions existing which in the judgment of the Emergency Coordinator/EOF Director warrant declaration of General Emergency. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. Other conditions exist which in the judgment of the Emergency Coordinator/EOF Director indicate that events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.	**HS2** Other conditions existing which in the judgment of the Emergency Coordinator/EOF Director warrant declaration of Site Area Emergency. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. Other conditions exist which in the judgment of the Emergency Coordinator/EOF Director indicate that events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the Exclusion Area Boundary.	**HA2** Other conditions existing which in the judgment of the Emergency Coordinator/EOF Director warrant declaration of an Alert. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. Other conditions exist which in the judgment of the Emergency Coordinator/EOF Director indicate that events are in process or have occurred which involve actual or likely potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	**HU2** Other conditions existing which in the judgment of the Emergency Coordinator warrant declaration of an Unusual Event. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. Other conditions exist which, in the judgment of the Emergency Coordinator, indicate that events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY				
Main Control Room Evacuation		**HS3** Control Room evacuation has been initiated and plant control cannot be established. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. Control Room evacuation has been initiated **AND** Control of the plant cannot be established in accordance with OP-901-502, Evacuation of Control Room & Subsequent Plant Shutdown within 15 minutes.	**HA3** Control Room evacuation has been initiated. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. Entry into OP-901-502, Evacuation of Control Room & Subsequent Plant Shutdown.	
Fire			**HA4** FIRE or EXPLOSION affecting the operability of plant safety systems required to establish or maintain safe shutdown. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. FIRE or EXPLOSION in the Reactor Auxiliary Building, Containment or Cooling Tower Areas **AND** Affected system parameter indications show degraded performance or plant personnel report VISIBLE DAMAGE to permanent structures or equipment within the specified area.	**HU4** FIRE within PROTECTED AREA boundary not extinguished within 15 minutes of detection. 1 2 3 4 5 6 D **Emergency Action Level(s):** 1. FIRE in or contiguous to Condensate Polisher Building, Containment, Fuel Handling Building, Reactor Auxiliary Building, Cooling Tower Areas or Turbine Building not extinguished within 15 minutes of Control Room notification or verification of a Control Room alarm.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY				
Toxic Gas			**HA5** Release of toxic or flammable gases within or contiguous to VITAL AREA which jeopardizes operation of systems required to maintain safe operations or establish or maintain safe shutdown. 1 2 3 4 5 6 D **Emergency Action Levels:** (1 or 2) 1. Report or detection of toxic gases within or contiguous to VITAL AREA in concentrations that may result in an atmosphere IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH) **OR** 2. Report or detection of gases in concentration > LOWER FLAMMABILITY LIMIT within or contiguous to VITAL AREA.	**HU5** Release of toxic or flammable gases deemed detrimental to normal operation of the plant. 1 2 3 4 5 6 D **Emergency Action Level(s):** (1 or 2) 1. Report or detection of toxic or flammable gases that has or could enter the Exclusion Area Boundary in amounts that can affect NORMAL PLANT OPERATIONS **OR** 2. Report by St. Charles Parish for evacuation or sheltering of site personnel based on an offsite event.

Plant Modes (white boxes indicate applicable modes) 1 Power Operations 2 Startup 3 Hot Standby 4 Hot Shutdown 5 Cold Shutdown 6 Refueling D Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY			
Natural Events		**HA6** Natural and destructive phenomena affecting the plant VITAL AREA. 1 2 3 4 5 6 D **Emergency Action Level(s):** (1 or 2 or 3 or 4 or 5) 1 RED LIGHT on the seismic monitor panel indicates a VALID Seismic Event > Operating Basis Earthquake (OBE) **OR** 2. Tornado or high winds > 100 mph within PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the following plant structures/equipment or Control Room indication of degraded performance of those systems • Containment • Reactor Auxiliary Building • Turbine Building • Cooling Tower Areas **OR** 3. Vehicle crash within PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the following plant structures or equipment therein or Control Room indication of degraded performance of those systems • Containment • Reactor Auxiliary Building • Turbine Building • Cooling Tower Areas **OR** 4. Turbine failure-generated missiles result in any VISIBLE DAMAGE to or penetration of any of the following plant areas • Containment • Reactor Auxiliary Building • Cooling Tower Areas **OR** 5. Uncontrolled flooding in the Reactor Auxiliary Building or Cooling Tower Areas that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards (e.g., electric shock) that preclude access necessary to operate or monitor safety equipment.	**HU6** Natural and destructive phenomena affecting the PROTECTED AREA. 1 2 3 4 5 6 D **Emergency Action Level(s):** (1 or 2 or 3 or 4 or 5 or 6 or 7 or 8) 1. Earthquake felt in plant and detected on station seismic instrumentation **OR** 2. Report by plant personnel of tornado or high winds > 100 mph striking within PROTECTED AREA boundary **OR** 3. Vehicle crash into plant structures or systems within PROTECTED AREA boundary **OR** 4. Report by plant personnel of an unanticipated EXPLOSION within PROTECTED AREA boundary resulting in VISIBLE DAMAGE to permanent structure or equipment **OR** 5. Report of turbine failure resulting in casing penetration or damage to turbine or generator seals **OR** 6. Uncontrolled flooding in Reactor Auxiliary Building or Cooling Tower Areas that has the potential to affect safety related equipment needed for the current operating mode **OR** 7. Hurricane force winds (≥ 74 mph) expected to arrive on site in ≤ 12 hours as projected by the National Weather Service for a hurricane event **OR** 8. River water level at the intake structure > +27 FT MSL.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

SYSTEM MALFUNCTION	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Loss of AC Power	**SG1** Prolonged loss of all offsite power and prolonged loss of all onsite AC power to essential busses. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Loss of power to all unit auxiliary and startup transformers **AND** Failure of both 'A' and 'B' emergency diesel generators to supply power to emergency busses **AND** Either of the following: (a or b) a. Restoration of at least one emergency bus within 4 hours is not likely **OR** b. FA1 entry conditions met.	**SS1** Loss of all offsite power and loss of all onsite AC power to essential busses. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Loss of power to all unit auxiliary and startup transformers **AND** Failure of the 'A' and 'B' emergency diesel generators to supply power to emergency busses **AND** Failure to restore power to at least one emergency bus within 15 minutes from the time of loss of both offsite and onsite AC power.	**SA1** AC power capability to essential busses reduced to a single power source > 15 minutes such that any additional single failure would result in station blackout. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. AC power capability to essential busses reduced to a single power source > 15 minutes **AND** Any additional single failure will result in station blackout.	**SU1** Loss of all offsite power to essential busses > 15 minutes. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Loss of power to all unit auxiliary and startup transformers > 15 minutes **AND** At least 'A' and 'B' emergency diesel generators supplying power to emergency busses.
Failure of Reactor Protection System	**SG3** Failure of the Reactor Protection System to complete an automatic trip and manual trip was NOT successful and there is indication of an extreme challenge to the ability to cool the core. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Indications exist that automatic and manual trip were not successful **AND** Either of the following: (a or b) a. Indication(s) exists that core cooling is extremely challenged as indicated by CET temperatures at or approaching 1200° F **OR** b. Indication(s) exists that heat removal is extremely challenged as indicated by inability to maintain at least one steam generator level > 50% wide range.	**SS3** Failure of Reactor Protection System instrumentation to complete or initiate an automatic reactor trip once a Reactor Protection System setpoint has been exceeded and manual trip was NOT successful. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Indication(s) exist that automatic and manual trip were not successful.	**SA3** Failure of Reactor Protection System instrumentation to complete or initiate an automatic reactor trip once a Reactor Protection System setpoint has been exceeded and manual trip was successful. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Indication(s) exist that indicate that the Reactor Protection System setpoint was exceeded and automatic trip did not occur and a successful manual trip occurred.	

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
SYSTEM MALFUNCTION				
Loss of DC		**SS4** Loss of all vital DC power. 1 2 3 4 **Emergency Action Level(s):** 1. Loss of all Vital DC power based on bus voltage indications < 108 volts for > 15 minutes.		
Heat Sink		**SS5** Complete loss of heat removal capability. 1 2 3 4 **Emergency Action Level(s):** 1. Loss of core cooling and heat sink.		
Loss of Annunciators		**SS6** Inability to monitor a SIGNIFICANT TRANSIENT in progress. 1 2 3 4 **Emergency Action Level(s):** 1. a. Loss of most or all annunciator cabinets C, D, H, K, M, N, SA, SB annunciators associated with safety systems **AND** b. Compensatory non-alarming indications are unavailable **AND** c. Indications needed to monitor safety functions (reactivity control, core cooling, maintaining reactor coolant system integrity or maintaining containment integrity) are unavailable **AND** d. SIGNIFICANT TRANSIENT in progress.	**SA6** UNPLANNED loss of most or all safety system annunciation or indication in the Control Room with either (1) a SIGNIFICANT TRANSIENT in progress, or (2) compensatory non-alarming indicators are unavailable. 1 2 3 4 **Emergency Action Level(s):** 1. UNPLANNED loss of most or all annunciator cabinets C, D, H, K, M, N, SA, SB annunciators or indicators associated with safety systems > 15 minutes **AND** Either of the following (a or b): a. SIGNIFICANT TRANSIENT is in progress **OR** b. Compensatory non-alarming indications are unavailable.	**SU6** UNPLANNED loss of most or all safety system annunciation or indication in the Control Room > 15 minutes. 1 2 3 4 **Emergency Action Level(s):** 1. UNPLANNED loss of most or all annunciator cabinets C, D, H, K, M, N, SA, SB annunciators or indicators associated with safety systems > 15 minutes.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

	GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
SYSTEM MALFUNCTION				
RCS Leakage				**SU7** RCS leakage. 1 2 3 4 5 6 **Emergency Action Levels:** (1 or 2) 1. Unidentified or pressure boundary leakage > 10 gpm **OR** 2. Identified leakage > 25 gpm.
Loss of Communications	**Table M1** **Onsite Communications Equipment** Plant radio system Plant paging system In-plant telephones Sound powered phones **Table M2** **Offsite Communications Equipment** All telephone lines (commercial and microwave) Industrial Hot Line ENS Civil Defense Radios Operational Hotline			**SU8** Unplanned loss of all onsite or offsite communications capabilities. 1 2 3 4 5 6 **Emergency Action Levels:** (1 or 2) 1. Loss of all Table M1 onsite communications equipment affecting the ability to perform routine operations **OR** 2. Loss of all Table M2 offsite communications capability.
Fuel Clad Degredation				**SU9** Fuel clad degradation. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Reactor coolant sample activity value indicating fuel clad degradation > Technical Specification allowable limits • > 60 µCi/gm DEI **OR** • >1.0 µCi/gm DEI for more than 48 hours during one continuous time interval **OR** • >100/Ē µCi/gm.
Inadvertent Criticality				**SU10** Inadvertent criticality. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. An UNPLANNED sustained positive startup rate observed on nuclear instrumentation.
Tech. Spec. Shutdown				**SU11** Inability to reach required shutdown within Technical Specification time limits. 1 2 3 4 5 6 **Emergency Action Level(s):** 1. Plant is not brought to required operating mode within Technical Specifications LCO Action Statement time.

Plant Modes (white boxes indicate applicable modes) 1 **Power Operations** 2 **Startup** 3 **Hot Standby** 4 **Hot Shutdown** 5 **Cold Shutdown** 6 **Refueling** D **Defueled**

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General Notes on Basis Document Use

Plant Operating Mode Usage for Waterford 3 EALs:

Mode 1 = Power Operations – Reactor Power > 5%, Keff ≥ 0.99

Mode 2 = Startup – Reactor Power ≤ 5%, Keff ≥ .99

Mode 3 = Hot Standby – RCS ≥ 350° F, Keff < .99

Mode 4 = Hot Shutdown – 200° F< RCS <350° F, Keff < .99

Mode 5 = Cold Shutdown – RCS < 200° F, Keff < .99

Mode 6 = Refueling – RCS < 140° F, Keff < .95, Fuel in the reactor vessel with the vessel head closure bolts less than fully tensioned or with the head removed

Defueled (D) – All reactor fuel removed from reactor pressure vessel (full core offload during refueling or extended outage). This is not an operating mode designation by Technical Specifications.

This basis document serves two basic functions:

- It provides background and explanatory information based on NEI 99-01 to present a basis for the origination of the Waterford 3 EALs for reviewers and users.
- The second function this basis document may provide is an aid to decision makers when making a determination to classify an emergency event. It is intended that decision makers have all the information in Attachment 7.1 of this procedure that they need to make a sound classification decision. Information that may be useful to a decision maker in classifying emergency events is indicated in red font in the Basis section for each IC in the Basis Document.

The expectation is that emergency classifications are to be made as soon as conditions are present and recognizable for the classification, but within 15 minutes or less in all cases of conditions present. A decision maker's use of this Basis Document for assistance is not intended to delay the classification.

DEFINITIONS

The following definitions are taken from NEI 99-01, the NEI White Paper on NRC Bulletin 2005-02 and the Waterford 3 Emergency Plan and applicable to the Waterford 3 emergency classification system:

AFFECTING SAFE SHUTDOWN: Event in progress has adversely affected functions that are necessary to bring the plant to and maintain it in the applicable HOT or COLD SHUTDOWN condition. Plant condition applicability is determined by Technical Specification LCOs in effect.

Example 1: Event causes damage that results in entry into an LCO that requires the plant to be placed in HOT SHUTDOWN. HOT SHUTDOWN is achievable, but COLD SHUTDOWN is not. This event **is not** "AFFECTING SAFE SHUTDOWN."

Example 2: Event causes damage that results in entry into an LCO that requires the plant to be placed in COLD SHUTDOWN. HOT SHUTDOWN is achievable, but COLD SHUTDOWN is not. This event **is** "AFFECTING SAFE SHUTDOWN."

BOMB: refers to an explosive device suspected of having sufficient force to damage plant systems or structures.

CIVIL DISTURBANCE: is a group of persons violently protesting station operations at the site.

CONFINEMENT BOUNDARY: is the barrier(s) between areas containing radioactive substances and the environment.

CONTAINMENT CLOSURE: Those actions taken by procedure within acceptable times as specified by procedure to close containment when in modes 5 or 6. Reference OP-901-131, Shutdown Cooling Malfunction, Attachment 7.1.

CONTAINMENT INTEGRITY: refers to that condition of the containment described in Technical Specifications definition 1.7.

EMERGENCY ACTION LEVEL (EAL): A pre-determined, site-specific, observable threshold for a plant Initiating Condition that places the plant in a given emergency class. An EAL can be: an instrument reading; an equipment status indicator; a measurable parameter (onsite or offsite); a discrete, observable event; results of analyses; entry into specific emergency operating procedures; or another phenomenon which, if it occurs, indicates entry into a particular emergency class.

DEFINITIONS

EMERGENCY CLASS: One of a minimum set of names or titles, established by the Nuclear Regulatory Commission (NRC), for grouping off-normal nuclear power plant conditions according to (1) their relative radiological seriousness, and (2) the time-sensitive onsite and off-site radiological emergency preparedness actions necessary to respond to such conditions. The existing radiological emergency classes, in ascending order of seriousness, are called:

- Notification of Unusual Event (Unusual Event)
- Alert
- Site Area Emergency
- General Emergency

EXCLUSION AREA BOUNDARY (EAB): For Waterford 3 EALs, the Emergency Plan Exclusion Area Boundary is the site boundary. The term "Exclusion Area Boundary" or "EAB" is used throughout the Waterford 3 EALs as the site boundary. The Emergency Plan defines the Exclusion Area Boundary (EAB) as "The border of the EXCLUSION AREA or an area corresponding to a distance of 914 meters from the Waterford 3 reactor."

EXPLOSION: is a rapid, violent, unconfined combustion, or catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures, systems, or components.

EXTORTION: is an attempt to cause an action at the station by threat of force.

FAULTED: in a steam generator, the existence of secondary side leakage that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized.

FIRE: is combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute FIREs. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

HOSTAGE: is a person(s) held as leverage against the station to ensure that demands will be met by the station.

DEFINITIONS

HOSTILE ACTION: an act toward a Nuclear Power Plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidates the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. HOSTILE ACTION should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the NPP. Non-terrorism-based EALs should be used to address such activities, (e.g., violent acts between individuals in the OWNER CONTROLLED AREA.)

HOSTILE FORCE: One or more individuals who are engaged in a determined assault, overtly or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction.

IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH): A condition that either poses an immediate threat to life and health or an immediate threat of severe exposure to contaminants which are likely to have adverse delayed effects on health.

IMMINENT: Mitigation actions have been ineffective, additional actions are not expected to be successful, and trended information indicates that the event or condition will occur. Where IMMINENT timeframes are specified, they shall apply.

INITIATING CONDITION (IC): One of a predetermined subset of nuclear power plant conditions where either the potential exists for a radiological emergency, or such an emergency has occurred.

INTRUSION / INTRUDER: is a person(s) present in a specified area without authorization. Discovery of a BOMB in a specified area is indication of INTRUSION into that area by a HOSTILE FORCE.

LOWER FLAMMABILITY LIMIT (LFL): The minimum concentration of a combustible substance that is capable of propagating a flame through a homogenous mixture of the combustible and a gaseous oxidizer.

NORMAL PLANT OPERATIONS: activities at the plant site associated with routine testing, maintenance, or equipment operations, in accordance with normal operating or administrative procedures. Entry into offnormal or emergency operating procedures, or deviation from normal security or radiological controls posture, is a departure from NORMAL PLANT OPERATIONS.

OWNER CONTROLLED AREA (OCA) The external area contiguous to the PROTECTED AREA extending outward to Entergy Louisiana, Inc. property lines.

DEFINITIONS

PROTECTED AREA: The area encompassed by physical barriers (the security fence) and to which access is controlled into the VITAL AREAS of the plant.

RUPTURED: in a steam generator, existence of primary-to-secondary leakage of a magnitude sufficient to require or cause a reactor trip and safety injection.

SABOTAGE: is deliberate damage, mis-alignment, or mis-operation of plant equipment with the intent to render the equipment inoperable. Equipment found tampered with or damaged due to malicious mischief may NOT meet the definition of SABOTAGE until this determination is made by security supervision.

SECURITY CONDITION: Any Security Event as listed in the approved security contingency plan that constitutes a threat/compromise to site security, threat/risk to site personnel, or a potential degradation to the level of safety of the plant. A SECURITY CONDITION does not involve a HOSTILE ACTION.

SIGNIFICANT TRANSIENT: is an UNPLANNED event involving one or more of the following: (1) automatic turbine runback >25% thermal reactor power, (2) electrical load rejection >25% full electrical load, (3) Reactor Trip, (4) Safety Injection Activation, or (5) thermal power oscillations >10%.

STRIKE ACTION: is a work stoppage within the PROTECTED AREA by a body of workers to enforce compliance with demands made on Entergy or its affiliates. The STRIKE ACTION must threaten to interrupt NORMAL PLANT OPERATIONS.

UNPLANNED: a parameter change or an event that is not the result of an intended evolution and requires corrective or mitigative actions.

VALID: an indication, report, or condition, is considered to be VALID when it is verified by (1) an instrument channel check, or (2) indications on related or redundant indicators, or (3) by direct observation by plant personnel, such that doubt related to the indicator's operability, the condition's existence, or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

VISIBLE DAMAGE: is damage to equipment or structure that is readily observable without measurements, testing, or analysis. Damage is sufficient to cause concern regarding the continued operability or reliability of affected safety structure, system, or component. Example damage includes: deformation due to heat or impact, denting, penetration, rupture, cracking, paint blistering. Surface blemishes (e.g., paint chipping, scratches) should not be included.

VITAL AREA: is any area, normally within the PROTECTED AREA, which contains equipment, systems, components, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AU1

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

Any UNPLANNED release of gaseous or liquid radioactivity to the environment that exceeds 2 times the radiological effluent ODCM limits for ≥ 60 minutes.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2 or 3)

1. VALID reading on any effluent monitor that exceeds 2 times the alarm setpoint established by a current radioactivity discharge permit for ≥ 60 minutes.

OR

2. VALID reading on one or more of the following radiation monitors that exceeds the reading shown for ≥ 60 minutes:

MONITOR	CONC.	EFFLUENT RATE
CONDENSER EXHAUST WRGM PRM-IRE-0002, RE0002-4		1.51E+05 uCi/sec
FUEL HANDLING BUILDING EXHAUST PIG, GAS CHANNEL , PRM-IRE-5107A or B, RE5107A-1 or RE5107B-1	1.61E-02 uCi/cc	
FUEL HANDLING BUILDING EXHAUST WRGM, PRM-IRE-3032, RE3032-4		2.25E+05 uCi/sec
PLANT STACK PIG GAS CHANNEL PRM-IRE-0100.1S or 2S, RE0100.1-1 or RE0100.2-1	3.45E-03 uCi/cc	
PLANT STACK WRGM PRM-IRE-0110, RE0110-4		1.51E+05 uCi/sec
[1]DRY COOLING TOWER SUMPS MONITOR, PRM-IRE-6775 or PRM-IRE-6776, RE6775-1 or RE6776-1	8.49E-04 uCi/ml	
[1]TURBINE BUILDING INDUSTRIAL WASTE SUMP MONITOR, PRM-IRE-6778, RE6778-1	8.49E-04 uCi/ml	

[1]Monitor reading not applicable if sump discharge is aligned to circulating water discharge.

OR

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AU1

3. Confirmed grab sample analyses for gaseous or liquid releases indicates concentrations or release rates, with a release duration of ≥ 60 minutes, in excess of 2 times ODCM based limits from the Technical Requirements Manual (TRM) (Table A1).

Table A1
TRM Limits

	ALERT	UE
Gaseous Release		
Noble Gases: ≤ 500 mrem/yr whole body	1.00E+05	1000
Noble Gases: ≤ 3000 mrem/yr skin	6.00E+05	6000
I-131, I-133, H-3 and particulates with half-lives > 8 days: ≤ 1500 mrem/year to any organ	3.00E+05	3000
Liquid Release		
Whole body: < 1.50 mrem/quarter	300	3
< 3 mrem/yr	600	6
Any Organ: < 5 mrem/quarter	1000	10
< 10 mrem/yr	2000	20

Basis:

This IC addresses a potential or actual decrease in the level of safety of the plant as indicated by a radiological release that exceeds regulatory commitments for an extended period of time. Waterford 3 SES incorporates features intended to control the release of radioactive effluents to the environment. Further, there are administrative controls established to prevent unintentional releases, or control and monitor intentional releases. These controls are located in the Offsite Dose Calculation Manual (ODCM). The occurrence of extended, uncontrolled radioactive releases to the environment is indicative of a degradation in these features and/or controls.

The ODCM multiples are specified in AU1 (and AA1) only to distinguish between non-emergency conditions, and from each other. While these multiples obviously correspond to an offsite dose or dose rate, the emphasis in classifying these events is the degradation in the level of safety of the plant, NOT the magnitude of the associated dose or dose rate.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AU1

The ODCM contains the specific release limits and appropriate surveillance requirements which normally monitor these limits. Releases should not be prorated or averaged over 60 minutes. For example, a release exceeding 4 times ODCM limits for 30 minutes does not meet the threshold for this event classification. The one-hour time period allows sufficient time to isolate any release after exceeding ODCM limits. Releases continuing for more than one hour represent inability to isolate or control the release. The Emergency Coordinator should not wait until 60 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 60 minutes. Also, if an ongoing release is detected and the starting time for that release is unknown, then the Emergency Coordinator should, in the absence of data to the contrary, assume that the release has exceeded 60 minutes and make the emergency declaration.

UNPLANNED, as used in this context, includes any release for which a liquid waste release or a gaseous waste release discharge permit was not prepared, or a release that exceeds the conditions (e.g., minimum dilution flow, maximum discharge flow, alarm set points, etc.) on the applicable package permit. Unplanned releases in excess of two times of the technical specification limit that continue for 60 minutes or longer represent an uncontrolled situation and a potential degradation in the level of safety. It is not intended that the release be averaged over 60 minutes. The event should be declared as soon as it is determined that the release duration has or will likely exceed one hour.

EAL #1 addresses radioactivity releases, that for whatever reason, cause effluent radiation monitor readings to exceed two times the Technical Specification limit and releases are not terminated within 60 minutes. In all cases, the applicable monitor is expected to be in **high alarm**, but AU1 and AA1 EAL #1 are based on the reading on the monitor and not its alarm status. The emergency classification is not made simply on the basis that the monitor has been in high alarm for 60 minutes. This alarm setpoint may be associated with a planned batch release, or a continuous release path. In either case, the setpoint is established by the ODCM to warn of a release that is not in compliance. Indexing the EAL threshold to the ODCM setpoints in this manner insures that the EAL threshold will never be less than the setpoint established by a specific discharge permit.

AU1

EAL #2 is similar to EAL #1, but is intended to address effluent or accident radiation monitors on release pathways for which a discharge permit would not be prepared for a non-routine release. The ODCM establishes a methodology for determining effluent radiation monitor setpoints. The ODCM specifies default source terms from the UFSAR and, for gaseous releases, prescribes the use of pre-determined annual average meteorology in the most limiting downwind sector for showing compliance with the regulatory commitments. These monitor reading EALs have been determined using this methodology. The values used on the Dry Cooling Tower and Turbine Building sump discharge are based on the release pathway being aligned to the Storm Water System or Discharge Canal vice the circulating water system and are not applicable if the pathway is aligned to the circulating water system. Grab sample analysis of the circulation water discharge, IAW EAL #3, would be necessary to determine the appropriate action.

EAL #3 addresses uncontrolled releases that are detected by sample analyses, particularly on unmonitored pathways, e.g., spills of radioactive liquids into storm drains, leakage into Mississippi river water system, etc.

Calculation HP-CALC-2005-002, "Emergency Action Levels (EALs) Abnormal Rad Levels and Radiological Effluent Based on Power Uprate Source Terms" and HP-CALC-2005-012, " Emergency Action Levels (EALs) (Fuel Handling Building Accident) Based on Power Uprate Source Terms" provide the basis for the radiation monitor readings selected for AU1, AA1, AS1 and AG1. The guidance from NEI 99-01 (Basis for Radiological Effluent Initiating Conditions) and Appendix A were used for these calculations. The calculations assume the same meteorology (annual average meteorology) and source term (Offsite Dose Calculation Manual – ODCM default source term) for all four emergency classifications. The back calculation methodology for the Site Area and General Emergency values utilizes the dose assessment method used by responders in emergency facilities to determine offsite doses and its corresponding dose factors and iodine to noble gas ratios. The NEI 99-01 Appendix A caution regarding overly conservative iodine to noble gas ratios was also considered in the calculation with an appropriate ratio correction factor selected.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AU2

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

Unexpected rise in plant radiation.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2)

1. a. VALID indication of uncontrolled water level drop in the reactor refueling cavity, spent fuel pool, or fuel transfer canal with all irradiated fuel assemblies remaining covered by water.

- Level drop may be indicated by personnel observation, spent fuel pool level below level plate, refueling crew report, indication on area security camera, RWSP level drop due to makeup demands.

AND

b. Unplanned VALID Area Radiation Monitor rise on any of the following:

- CONTAINMENT AREA RADIATION MONITORS (PURGE ISOLATION), (ARM-IRE-5024S, 5025S, 5026S OR 5027S, RE5024-1, RE5025-1, RE5026-1 OR RE5027-1)
- CONTAINMENT +46 STAIRS MONITORS, (ARM-IRE-5014 OR 5015, RE5014-1 OR RE5015-1)
- REFUELING BRIDGE AREA RADIATION MONITOR (ARM-IRE-5013, RE5013-1)
- FHB AREA RADIATION MONITORS (ISOLATION), (ARM-IRE-0300.1S, .2S, .3S OR .4S, RE0300.1-1, RE0300.2-1, RE0300.3-1, OR RE0300.4-1)

OR

2. Unplanned VALID Area Radiation Monitor readings indicate a rise in plant radiation levels by a factor of 1000 over normal levels (highest reading in the past 24 hours excluding the current peak value).

Basis:

This IC addresses increased radiation levels as a result of water level decreases above the reactor vessel flange or events that have resulted, or may result, in unexpected increases in radiation dose rates within plant buildings. These radiation increases represent a loss of control over radioactive material and may represent a potential degradation in the level of safety of the plant.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AU2

In light of Reactor Cavity Seal failure incidents at two different PWRs and loss of water in the Spent Fuel Pit/Fuel Transfer Canal at a BWR, explicit coverage of these types of events via EAL #1 is appropriate given their potential for increased doses to plant staff. Classification as an Unusual Event is warranted as a precursor to a more serious event.

Specific indications may include instrumentation such as water level and local area radiation monitors, and personnel (e.g., refueling crew) reports. Depending on available level instrumentation, the declaration may be based on indications of water makeup rate or decrease in Refueling Water Storage Pool level. Video cameras (Security or outage-related) may allow remote observation of level. Credit should not be taken for inventory additions to maintain level above the threshold.

While a radiation monitor could detect an increase in dose rate due to a drop in the water level, it might not be a reliable indication of whether or not the fuel is covered. For example, the reading on an area radiation monitor located on the refueling bridge may increase due to planned evolutions such as head lift, or even a fuel assembly being raised in the refuel mast. Generally, increased radiation monitor indications will need to be combined with another indicator (or personnel report) of water loss. For refueling events where the water level drops below the reactor vessel flange, classification would be via CU2. This event escalates to an Alert per AA2 if irradiated fuel outside the reactor vessel is uncovered. For events involving irradiated fuel in the reactor vessel, escalation would be via the Fission Product Barrier Matrix for events in operating modes 1-4.

EAL #2 addresses UNPLANNED increases in in-plant radiation levels that represent a degradation in the control of radioactive material, and represent a potential degradation in the level of safety of the plant. Normal levels can be considered as the HIGHEST reading in the past twenty-four hours excluding the current peak value.

This event escalates to an Alert in accordance with AA3 if the increase in dose rates impedes personnel access necessary for safe operations.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AA1

Initiating Condition – ALERT

Any UNPLANNED release of gaseous or liquid radioactivity to the environment that exceeds 200 times the radiological effluent ODCM limits for ≥ 15 minutes.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2 or 3)

1 VALID reading on any effluent monitor that exceeds 200 times the alarm setpoint established by a current radioactivity discharge permit for ≥ 15 minutes.

OR

2. VALID reading on one or more of the following radiation monitors that exceeds the reading shown for ≥ 15 minutes:

- CONDENSER EXHAUST WRGM (PRM-IRE-0002, RE0002-4) indicates release rate > 1.51E+07 uCi/sec.
- FUEL HANDLING BUILDING EXHAUST WRGM (PRM-IRE-3032, RE3032-4) indicates > 2.25E+07 uCi/sec.
- PLANT STACK WRGM (PRM-IRE-0110, RE0110-4) indicates > 1.51E+07 uCi/sec.

OR

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AA1

3. Confirmed grab sample analyses for gaseous or liquid releases indicates concentrations or release rates, with a release duration of ≥ 15 minutes, in excess of 200 times ODCM based limits from the Technical Requirements Manual (TRM) (Table A1).

Table A1 TRM Limits		
	ALERT	UE
Gaseous Release		
Noble Gases: ≤ 500 mrem/yr whole body	1.00E+05	1000
Noble Gases: ≤ 3000 mrem/yr	6.00E+5	6000
I-131, I-133, H-3 and particulates with half-lives > 8 days: ≤ 1500 mrem/year to any organ	3.00E+05	3000
Liquid Release		
Whole body: < 1.50 mrem/quarter	300	3
< 3 mrem/yr	600	6
Any Organ: < 5 mrem/quarter	1000	10
< 10 mrem/yr	2000	20

Basis:

This IC addresses a potential or actual decrease in the level of safety of the plant as indicated by a radiological release that exceeds regulatory commitments for an extended period of time. Waterford 3 SES incorporates features intended to control the release of radioactive effluents to the environment. Further, there are administrative controls established to prevent unintentional releases, or control and monitor intentional releases. These controls are located in the ODCM. The occurrence of extended, uncontrolled radioactive releases to the environment is indicative of degradation in these features and/or controls.

The ODCM multiples are specified in AA1 (and AU1) only to distinguish between non-emergency conditions, and from each other. While these multiples obviously correspond to an offsite dose or dose rate, the emphasis in classifying these events is the degradation in the level of safety of the plant, NOT the magnitude of the associated dose or dose rate.

Releases should not be prorated or averaged. For example, a release exceeding 100 times ODCM limits for 30 minutes does not meet the threshold for this event classification.

UNPLANNED, as used in this context, includes any release for which a liquid waste release or a gaseous waste release discharge permit was not prepared, or a release that exceeds the conditions (e.g., minimum dilution flow, maximum discharge flow, alarm set points, etc.) on the applicable package permit. The Emergency Coordinator/EOF Director should not wait until 15 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 15 minutes. Also, if an ongoing release is detected and the starting time for that release is unknown, then the Emergency Coordinator/EOF Director should, in the absence of data to the contrary, assume that the release has exceeded 15 minutes and make the emergency declaration.

EAL #1 addresses radioactivity releases that for whatever reason cause effluent radiation monitor readings that exceed 200 times the alarm setpoint established by the radioactivity discharge permit. In all cases, the applicable monitor is expected to be in **alarm**, but AU1 and AA1 EAL #1 are based on the reading on the monitor and not its alarm status. The emergency classification is not made simply on the basis that the monitor has been in high alarm for 15 minutes. This alarm setpoint may be associated with a planned batch release, or a continuous release path. In either case, the setpoint is established by the ODCM to warn of a release that is not in compliance. Indexing the EAL threshold to the ODCM setpoints in this manner insures that the EAL threshold will never be less than the setpoint established by a specific discharge permit.

EAL #2 is similar to EAL #1, but is intended to address effluent or accident radiation monitors on release pathways for which a discharge permit would not be prepared for a non-routine release. The ODCM establishes a methodology for determining effluent radiation monitor setpoints. The ODCM specifies default source terms from the UFSAR and, for gaseous releases, prescribes the use of predetermined annual average meteorology in the most limiting downwind sector for showing compliance with the regulatory commitments. These monitor reading EALs have been determined using this methodology.

EAL #3 addresses uncontrolled releases that are detected by sample analyses, particularly on unmonitored pathways, e.g., spills of radioactive liquids into storm drains, leakage into Mississippi river water system, etc.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AA1

Calculation HP-CALC-2005-002, "Emergency Action Levels (EALs) Abnormal Rad Levels and Radiological Effluent Based on Power Uprate Source Terms" and HP-CALC-2005-012, " Emergency Action Levels (EALs) (Fuel Handling Building Accident) Based on Power Uprate Source Terms" provide the basis for the radiation monitor readings selected for AU1, AA1, AS1 and AG1. The guidance from NEI 99-01 (Basis for Radiological Effluent Initiating Conditions) and Appendix A were used for these calculations. The calculations assume the same meteorology (annual average meteorology) and source term (Offsite Dose Calculation Manual – ODCM default source term) for all four emergency classifications. The back calculation methodology for the Site Area and General Emergency values utilizes the dose assessment method used by responders in emergency facilities to determine offsite doses and its corresponding dose factors and iodine to noble gas ratios. The NEI 99-01 Appendix A caution regarding overly conservative iodine to noble gas ratios was also considered in the calculation with an appropriate ratio correction factor selected.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AA2

Initiating Condition – ALERT

Damage to irradiated fuel or loss of water level that has or will result in uncovering of irradiated fuel outside the reactor vessel.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2)

1. VALID alarm or reading ≥ HIGH alarm limits on one or more of the following radiation monitors:

   - CONTAINMENT AREA RADIATION MONITORS (PURGE ISOLATION), (ARM-IRE-5024S, 5025S, 5026S OR 5027S, RE5024-1, RE5025-1, RE5026-1 OR RE5027-1) ≥ HIGH alarm

   - CONTAINMENT +46 STAIRS MONITORS, (ARM-IRE-5014 OR 5015, RE5014-1 OR RE5015-1) ≥ HIGH alarm

   - REFUELING BRIDGE AREA RADIATION MONITOR (ARM-IRE-5013, RE5013-1) ≥ HIGH alarm

   - FHB AREA RADIATION MONITORS (ISOLATION), (ARM-IRE-0300.1S, .2S, 3S OR .4S, RE0300.1-1, RE0300.2-1, RE0300.3-1, OR RE0300.4-1) ≥ 1000 mR/hr

   - FUEL HANDLING BUILDING EXHAUST PIG, GAS CHANNEL , PRM-IRE-5107A OR B, RE5107A-1 OR RE5107B-1 ≥ HIGH alarm

OR

2. Valid indication of uncontrolled water level drop in the reactor refueling cavity, spent fuel pool or fuel transfer canal that will result in irradiated fuel uncovering.

Basis:

This IC addresses specific events that have resulted, or may result, in unexpected increases in radiation dose rates within plant buildings, and may be a precursor to a radioactivity release to the environment. These events represent a loss of control over radioactive material and represent degradation in the level of safety of the plant. These events escalate from AU2 in that fuel activity has been released, or is anticipated due to fuel heatup.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AA2

Uncontrolled water level decrease may be detected by visual observation, increased radiation levels or various other symptoms that are considered valid indicators of the event. Fuel uncovery may be expected based on abnormal radiation levels, visual observation, or best judgment of the Emergency Coordinator/EOF Director based on present and past trends.

EAL #1 addresses radiation monitor indications of fuel uncovery and/or fuel damage. Increased readings on ventilation monitors may be indication of a radioactivity release from the fuel, confirming that damage has occurred. Increased background at the monitor due to water level decrease may mask increased ventilation exhaust airborne activity and needs to be considered. While a radiation monitor could detect an increase in dose rate due to a drop in the water level, it might not be a reliable indication of whether or not the fuel is covered. For example, the monitor could in fact be properly responding to a known event involving transfer or relocation of a source, stored in or near the fuel pool or responding to a planned evolution such as removal of the reactor head. Application of these Initiating Conditions requires understanding of the actual radiological conditions present in the vicinity of the monitor.

In EAL #2, indications may include instrumentation such as water level and local area radiation monitors, and personnel (e.g., refueling crew) reports. Depending on available level indication, the declaration may be based on indications of water makeup rate or decrease in Refueling Water Storage Pool level. Video cameras (Security or outage-related) may allow remote observation of level.

Escalation, if appropriate, would occur via AS1 or AG1 or Emergency Coordinator/EOF Director Judgment.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AA3

Initiating Condition – ALERT

Release of radioactive material or rise in radiation levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2)

1. VALID radiation level > 15 mR/hr in areas requiring continuous occupancy to maintain plant safety functions.

   - Main Control Room Area Radiation Monitor (ARM-IRE- 5001, RE5001-1) > 15 mR/hr
   - Radiation level in CAS >15 mR/hr

OR

2. VALID radiation level > Table A2 value in plant vital areas requiring infrequent access to maintain plant safety functions (Table A2).

Table A2 Radiation Levels in Areas Requiring Infrequent Access	
VCT Room – 10 R/hr	Safeguards Rooms – 10 R/hr
VALUE FOR ALL AREAS BELOW IS 2.5 R/hr:	
+46 Chiller Area	BAM Tank Rooms
MSIV Areas	Relay Room
Electrical Penetration Area	Remote Shutdown Room
EDG Rooms	Battery Rooms
Valve Bay	Wing Areas
CVC-507 Valve Area	CCW Heat Exchanger Rooms
CCW Pump Rooms	

Basis:
The radiation levels in the EALs for this IC may be identified by a radiation monitor value or direct survey.

This IC addresses increased radiation levels that impede necessary access to operating stations, or other areas containing equipment that must be operated manually or that requires local monitoring, in order to maintain safe operation or perform a safe shutdown. It is this impaired ability to operate the plant that results in the actual or potential substantial degradation of the level of safety of the plant. The cause and/or magnitude of the increase in radiation levels is not a concern of this

IC. The Emergency Coordinator/EOF Director must consider the source or cause of the increased radiation levels and determine if any other IC may be involved. For example, a 15 mR/hr dose rate in the control room or a high radiation monitor reading may be a problem in itself. However, the increase may also be indicative of high dose rates in the containment due to a LOCA. In this latter case, an SAE or GE may be indicated by the fission product barrier matrix EALs.

This IC is not meant to apply to increases in the containment dome radiation monitors as these are events which are addressed in the fission product barrier matrix EALs. Nor is it intended to apply to anticipated temporary increases due to planned events (e.g., incore detector movement, radwaste container movement, depleted resin transfers, etc.).

The value of 15mR/hr is derived from the GDC 19 value of 5 Rem in 30 days with adjustment for expected occupancy times. Although Section III.D.3 of NUREG-0737, *"Clarification of TMI Action Plan Requirements"*, provides that the 15 mR/hr value can be averaged over the 30 days, the value is used here without averaging, as a 30 day duration implies an event potentially more significant than an Alert.

For areas requiring infrequent access, the value of 2.5 R/hr was selected for those areas that are not already high radiation areas because it is a value with a specific action for Radiation Protection Superintendent approval addressed in RP-105, Radiation Work Permits that would result in exposure control measures intended to maintain doses within normal occupational guidelines and limits (i.e., 10CFR20), and in doing so, will impede necessary access. The 10 R/hr value is selected for those areas that are already high radiation areas because some greater amount of radiological control is already in place as a baseline condition for these areas (such as the requirement to notify Radiation Protection and get a briefing) prior to entry. In selecting both the 2.5 R/hr value and the 10 R/hr value, consideration was given to preclude unnecessary EAL entry for radiological conditions that may fluctuate during normal plant operations (e.g., incore detector movement, radwaste container movement, depleted resin transfers, etc.). As used here, *impede,* includes hindering or interfering provided that the interference or delay is sufficient to significantly threaten the safe operation of the plant. The list of plant areas was selected from a review of the 10 CFR 50 Appendix R analysis.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AS1

Initiating Condition – SITE AREA EMERGENCY

Offsite dose resulting from an actual or imminent release of gaseous radioactivity exceeds 100 mR TEDE or 500 mR CDE Thyroid for the actual or projected duration of the release.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2 or 3)

Note: *If dose assessment results are available at the time of declaration, then the classification should be based on EAL #2 instead of EAL #1. While necessary declarations should not be delayed awaiting results, the dose assessment should be initiated / completed in order to determine if the classification should be subsequently escalated.*

1. VALID reading on one or more of the following radiation monitors that exceeds or is expected to exceed the reading shown for ≥ 15 minutes:

   - CONDENSER EXHAUST WRGM (PRM-IRE-0002, RE0002-4) indicates release rate > 2.69E+08 µCi/sec

   - FUEL HANDLING BUILDING EXHAUST WRGM (PRM-IRE-3032, RE3032-4) indicates release rate > 1.75E+08 µCi/sec

   - PLANT STACK WRGM (PRM-IRE-0110, RE0110-4) indicates release rate > 2.55E+08 µCi/sec

OR

2. Dose assessment using actual meteorology indicates doses > 100 mR TEDE or > 500 mR CDE Thyroid at or beyond the EAB.

OR

3. Field survey results indicate closed window dose rates >100 mR/hr expected to continue for > one hour; or analyses of field survey samples indicate CDE Thyroid ≥ 500 mR for one hour of inhalation, at or beyond the EAB.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AS1

Basis:
This IC addresses radioactivity releases that result in doses at or beyond the EAB that exceed a small fraction of the EPA Protective Action Guides (PAGs). Releases of this magnitude are associated with the failure of plant systems needed for the protection of the public. While these failures may be addressed by other ICs, this IC provides appropriate diversity and addresses events which may not be able to be classified on the basis of plant status alone, e.g., fuel handling accident in spent fuel building.

The actual or projected dose of 100 mR TEDE is set at 10% of the EPA Protective Action Guide (PAG) values given in EPA-400-R-92-001, while the 500 mR CDE thyroid was established in consideration of the 1:5 ratio of the EPA PAG for TEDE and thyroid CDE. The TEDE integrated dose value also provides a desirable gradient between the Alert, Site Area Emergency and General Emergency classes.

The Emergency Coordinator/EOF Director should not wait until 15 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 15 minutes.

The monitor list in EAL #1 includes monitors on the primary potential release pathways (Plant stack, Primary/Secondary leak, Fuel Handling Accident) for Waterford 3. The EPA PAGs are expressed in terms of the sum of the effective *dose equivalent (EDE)* and the *committed effective dose equivalent (CEDE)*, or as the thyroid *committed dose equivalent (CDE).* For the purpose of these EALs, the dose quantity *total effective dose equivalent (TEDE),* as defined in 10 CFR 20, is used in lieu of *"...sum of EDE and CEDE...."* The EPA PAG guidance in EPA-400R-92-001 provides for the use of adult thyroid dose conversion factors.

The monitor reading EALs were determined using a dose assessment method that back calculates from the dose values specified in the IC. Calculation HP-CALC-2005-002, "Emergency Action Levels (EALs) Abnormal Rad Levels and Radiological Effluent Based on Power Uprate Source Terms" and HP-CALC-2005-012, "Emergency Action Levels (EALs) (Fuel Handling Building Accident) Based on Power Uprate Source Terms" provide the basis for the radiation monitor readings selected for AU1, AA1, AS1 and AG1. The guidance from NEI 99-01 (Basis for Radiological Effluent Initiating Conditions) and Appendix A were used for these calculations. The calculations assume the same meteorology (annual average meteorology) and source term (Offsite Dose Calculation Manual – ODCM default source term) for all four emergency classifications. The back calculation methodology for the Site Area and General Emergency values utilizes the dose assessment method used by responders in emergency facilities to determine offsite doses and its corresponding dose factors and iodine to noble gas ratios. The NEI 99-01 Appendix A caution regarding overly conservative iodine to noble gas ratios was also considered in the calculation with an appropriate ratio correction factor selected.

Since doses are generally not monitored in real-time, a release duration of one hour was assumed, and the EALs are based on a EAB (or beyond) dose of 100 mR/hour whole body or 500 mR/hour thyroid, whichever is more limiting (as was done for EALs #2 and #3). If analyses indicate a longer or shorter duration for the period in which the substantial portion of the activity is released, the longer duration should be used.

Since dose assessment in EALs #2 and #3 is based on actual meteorology, whereas the monitor readings in EAL #1 are not, the results from these assessments may indicate that the classification is not warranted, or may indicate that a higher classification is warranted. For this reason, decision makers should ensure performance of dose assessments using actual meteorology and release information are performed in a timely manner when release conditions are detected. If the results of these dose assessments are available when the classification is made (e.g., initiated at a lower classification level), then the dose assessment results override the monitor reading EALs. However, classification should not be delayed pending the results of these dose assessments. If dose assessment team calculations can not be completed in 15 minutes, then valid monitor readings should be used for emergency classification.

Field team surveys in EAL #3 are performed at or beyond the EAB and at the most accurate indicator of the condition. Field data are independent of release elevation and meteorology. The assumed release duration is one hour for the basis of the EAL. Expected post accident source terms would be dominated by noble gases providing the dose rate value. Sampling of radioiodine by adsorption on a charcoal cartridge should determine the iodine value.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AG1

Initiating Condition – GENERAL EMERGENCY

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.

Operating Mode Applicability: All

Emergency Action Level(s): (1 or 2 or 3)

Note: *If dose assessment results are available at the time of declaration, then the classification should be based on EAL #2 instead of EAL #1. While necessary declarations should not be delayed awaiting results, the dose assessment should be initiated / completed in order to more accurately characterize the nature of the release.*

1. VALID reading on one or more of the following radiation monitors that exceeds or is expected to exceed the reading shown for ≥ 15 minutes:

   - CONDENSER EXHAUST WRGM (PRM-IRE-0002, RE0002-4) indicates release rate > 2.69E+09 uCi/sec

   - FUEL HANDLING BUILDING EXHAUST WRGM (PRM-IRE-3032, RE3032-4) indicates release rate > 1.75E+09 uCi/sec

   - PLANT STACK WRGM (PRM-IRE-0110, RE0110-4) indicates release rate > 2.55E+09 uCi/sec

OR

2. Dose assessment using actual meteorology indicates doses > 1000 mR TEDE or > 5000 mR CDE Thyroid at or beyond the EAB.

OR

3. Field survey results indicate closed window dose rates >1000 mR/hr expected to continue for > one hour; or analyses of field survey samples indicate CDE Thyroid ≥ 5000 mR for one hour of inhalation, at or beyond the EAB.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AG1

Basis:

This IC addresses radioactivity releases that result in doses at or beyond the EAB that exceed the EPA Protective Action Guides (PAGs). Public protective actions are required. Releases of this magnitude are associated with the failure of plant systems needed for the protection of the public and likely involve fuel damage. While these failures are addressed by other ICs, this IC provides appropriate diversity and addresses events which may not be able to be classified on the basis of plant status alone. It is important to note that, for the more severe accidents, the release may be unmonitored or there may be large uncertainties associated with the source term and/or meteorology.

The Emergency Coordinator/EOF Director should not wait until 15 minutes has elapsed, but should declare the event as soon as it is determined that the release duration has or will likely exceed 15 minutes.

The actual or projected dose of 1000 mR TEDE and 5000 mR CDE thyroid integrated doses are based on the EPA Protective Action Guide (PAG) values given in EPA-400-R-92-001, which indicates that public protective actions are indicated if doses exceed these values. This is consistent with the emergency class description of a General Emergency.

The monitor list in EAL #1 includes monitors on potential gaseous effluent release pathways (Plant stack, Primary/Secondary Leak, Fuel Handling Accident). The EPA PAGs are expressed in terms of the sum of the effective *dose equivalent (EDE)* and the *committed effective dose equivalent (CEDE)*, or as the thyroid *committed dose equivalent (CDE).* For the purpose of these EALs, the dose quantity *total effective dose equivalent (TEDE),* as defined in 10 CFR 20, is used in lieu of *"...sum of EDE and CEDE...."* The EPA PAG guidance in EPA-400R-92-001 provides for the use of adult thyroid dose conversion factors.

The monitor reading EALs were determined using a dose assessment method that back calculates from the dose values specified in the IC.

ABNORMAL RADIATION LEVELS/RADIOLOGICAL EFFLUENTS

AG1

Calculation HP-CALC-2005-002, "Emergency Action Levels (EALs) Abnormal Rad Levels and Radiological Effluent Based on Power Uprate Source Terms" and HP-CALC-2005-012, "Emergency Action Levels (EALs) (Fuel Handling Building Accident) Based on Power Uprate Source Terms" provide the basis for the radiation monitor readings selected for AU1, AA1, AS1 and AG1. The guidance from NEI 99-01 (Basis for Radiological Effluent Initiating Conditions) and Appendix A were used for these calculations. The calculations assume the same meteorology (annual average meteorology) and source term (Offsite Dose Calculation Manual – ODCM default source term) for all four emergency classifications. The back calculation methodology for the Site Area and General Emergency values utilizes the dose assessment method used by responders in emergency facilities to determine offsite doses and its corresponding dose factors and iodine to noble gas ratios. The NEI 99-01 Appendix A caution regarding overly conservative iodine to noble gas ratios was also considered in the calculation with an appropriate ratio correction factor selected.

Since doses are generally not monitored in real-time, a release duration of one hour was assumed, and the EALs are based on a EAB (or beyond) dose of 1000 mR/hour whole body or 5000 mR/hour thyroid, whichever is more limiting (as was done for EALs #2 and #3). If analyses indicate a longer or shorter duration for the period in which the substantial portion of the activity is released, the longer duration should be used.

Since dose assessment in EALs #2 and #3 is based on actual meteorology, whereas the monitor readings in EAL #1 are not, the results from these assessments may indicate that the classification is not warranted. For this reason, decision makers should ensure performance of dose assessments using actual meteorology and release information are performed in a timely manner when release conditions are detected. If the results of these dose assessments are available when the classification is made (e.g., initiated at a lower classification level), then the dose assessment results override the monitor reading EALs. However, classification should not be delayed pending the results of these dose assessments. If dose assessment team calculations can not be completed in 15 minutes, then valid monitor readings should be used for emergency classification.

Field team surveys in EAL #3 are performed at or beyond the EAB and at the most accurate indicator of the condition. Field data are independent of release elevation and meteorology. The assumed release duration is one hour for the basis of the EAL. Expected post accident source terms would be dominated by noble gases providing the dose rate value. Sampling of radioiodine by adsorption on a charcoal cartridge should determine the iodine value.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU1

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

RCS leakage.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**

Emergency Action Level(s): (1 or 2)

1. Unidentified or pressure boundary leakage > 10 gpm.

OR

2. Identified leakage > 25 gpm .

Basis:

This IC is included as a NOUE because it is considered to be a potential degradation of the level of safety of the plant. The 10 gpm value for the unidentified and pressure boundary leakage was selected as it is sufficiently large to be observable via normally installed instrumentation (e.g., Pressurizer level, RCS loop level instrumentation, etc.) or reduced inventory instrumentation such as level hose indication. Lesser values must generally be determined through time-consuming surveillance tests (e.g., mass balances). The EAL for identified leakage is set at a higher value due to the lesser significance of identified leakage in comparison to unidentified or pressure boundary leakage. Steam generator tube leakage is identified leakage. Prolonged loss of RCS inventory may result in escalation to the Alert level via either CA1 or CA3.

The difference between CU1 and CU2 deals with the RCS conditions that exist between cold shutdown and refueling mode applicability. In cold shutdown, the RCS will normally be intact and RCS inventory and level monitoring means such as Pressurizer level indication and makeup volume control tank levels are normally available. In the refueling mode, the RCS is not intact and reactor vessel level and inventory are monitored by different means.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU2

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

UNPLANNED loss of RCS inventory with irradiated fuel in the reactor vessel.

Operating Mode Applicability: **Refueling (Mode 6)**

Emergency Action Level(s): (1 or 2)

1. UNPLANNED RCS level drop below the vessel flange for ≥ 15 minutes

OR

2. a. Loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise

AND

   b. Reactor vessel level cannot be monitored

Basis:

This IC is included as a NOUE because it may be a precursor of more serious conditions and, as result, is considered to be a potential degradation of the level of safety of the plant. Refueling evolutions that decrease RCS water level below the reactor vessel flange are carefully planned and procedurally controlled. An UNPLANNED event that results in water level decreasing below the reactor vessel flange warrants declaration of a NOUE due to the reduced inventory that is available to keep the core covered. The allowance of 15 minutes was chosen because it is reasonable to assume that level can be restored within this time frame using one or more of the redundant means of refill that should be available. If level cannot be restored in this time frame then it may indicate a more serious condition exists. Continued loss of Inventory will result in escalation to the Alert level via either CA2 or CA3.

The difference between CU1 and CU2 deals with the RCS conditions that exist between cold shutdown and refueling modes. In cold shutdown, the RCS will normally be intact and standard RCS inventory and level monitoring means are available. In the refueling mode, the RCS is not intact and reactor vessel level and inventory are monitored by different means.

In the refueling mode, normal means of core temperature indication and RCS level indication may not be available. Redundant means of reactor vessel level indication

will normally be installed (including the ability to monitor level visually) to assure that the ability to monitor level will not be interrupted. However, if all level indication were to be lost during a loss of inventory event, the operators would need to determine that reactor vessel inventory loss was occurring by observing containment sump and reactor drain tank level changes. Sump and tank level increases must be evaluated against other potential sources of leakage such as cooling water sources inside the containment to ensure they are indicative of RCS leakage. Escalation to Alert would be via either CA2 or RCS heatup via CA3.

EAL 1 involves a decrease in RCS level below the top of the reactor vessel flange that continues for 15 minutes due to an **UNPLANNED** event. This EAL is **not** applicable to decreases in flooded reactor cavity level (covered by AU2 EAL1) **until** such time as the level decreases to the level of the vessel flange. If reactor vessel level continues to decrease and reaches the Bottom ID of the RCS Loop (12 ft. MSL for these ICs), then escalation to CA2 would be appropriate.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU3

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

UNPLANNED loss of decay heat removal capability with irradiated fuel in the reactor vessel.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level(s): (1 or 2)

1. An UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit

OR

2. Loss of all RCS temperature and reactor vessel level indication for > 15 minutes.

Basis:

This IC is included as a NOUE because it may be a precursor of more serious conditions and, as a result, is considered to be a potential degradation of the level of safety of the plant. In cold shutdown, the ability to remove decay heat relies primarily on forced cooling flow. Operation of the systems that provide this forced cooling may be jeopardized due to the unlikely loss of electrical power or RCS inventory. Temporary instrumentation and jumpers are maintained in service such that the operators are able to monitor RCS temperature and reactor vessel level so that escalation to the alert level via CA3 or CA1 will occur if required.

Loss of forced decay heat removal at reduced inventory may result in more rapid increases in reactor coolant temperatures depending on the time since shutdown. Escalation to the Alert level via CA3 is provided dependent upon containment closure and RCS integrity conditions.

Redundant means of reactor vessel level indication are procedurally installed in accordance with OP-001-003, Reactor Coolant System Drain Down, to assure that the ability to monitor level will not be interrupted. However, if all level and temperature indication were to be lost in either the cold shutdown or refueling modes, EAL 2 would result in declaration of a NOUE if either temperature or level indication cannot be restored within 15 minutes from the loss of both means of indication. Escalation to Alert would be via CA1 based on an inventory loss or CA3 based on exceeding RCS temperature criteria. The Emergency Coordinator must remain attentive to events or conditions that lead to the conclusion that exceeding the EAL threshold is imminent. If, in the judgment of the Emergency Coordinator, an imminent situation is at hand, the classification should be made as if the threshold has been exceeded.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU5

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

Loss of all offsite power to essential busses > 15 minutes.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level(s):

1. a. Loss of power to all unit auxiliary and startup transformers > 15 minutes.

AND

b. At least emergency diesel generator 'A' or 'B' is supplying power to emergency busses.

Basis:

Prolonged loss of AC power reduces required redundancy and potentially degrades the level of safety of the plant by rendering the plant more vulnerable to a complete loss of AC power (e.g. station blackout). Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

Credit for Temporary Emergency Diesel Generators (TEDs) may **NOT** be taken because they are not a credited power source in the Technical Specifications for modes 5 and 6.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU6

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

UNPLANNED loss of required DC power > 15 minutes.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level:

1. a. UNPLANNED loss of vital DC power to required DC busses based on bus voltage indication < 108 volts.

AND

b. Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.

Basis:

This IC refers to loss of vital DC power from the 3A-DC, 3B-DC or 3AB-DC busses dependant upon designated protected train operability status. The purpose of this IC and its associated EALs is to recognize a loss of DC power compromises the ability to monitor and control the removal of decay heat during Cold Shutdown or Refueling operations. This EAL is intended to be anticipatory in as much as the operating crew may not have necessary indication and control of equipment needed to respond to the loss.

UNPLANNED is included in this EAL to preclude the declaration of an emergency as a result of planned maintenance activities. Routinely, Waterford 3 performs maintenance on a Train related basis during shutdown periods. It is intended that the loss of the operating (operable) train is to be considered. If this loss results in the inability to maintain Cold Shutdown, then the escalation to an Alert will be in accordance with CA3.

The minimum voltage necessary, based on plant design, is 105 volts; however, the lowest battery voltage attained on a loss of off site power at the end of the 4 hour period is 107.4 volts on the 'B' battery bank. 108 volts is used for the EAL indication because the Control Room instrumentation reads in 2 volt increments. Reference calculations ECE91-058, "Battery 3A-S "A Train" Calculation for Station Blackout" and ECE91-059, "Battery 3B-S "B Train" Calculation for Station Blackout."

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU7

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

Inadvertent criticality.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level(s):

1. An UNPLANNED sustained positive startup rate observed on nuclear instrumentation.

Basis:

This IC addresses criticality events that occur in Cold Shutdown or Refueling modes (NUREG 1449, Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States) such as fuel misloading events and inadvertent dilution events. This IC indicates a potential degradation of the level of safety of the plant, warranting a NOUE classification. This IC excludes inadvertent criticalities that occur during planned reactivity changes associated with reactor startups (e.g., criticality earlier than estimated) which are addressed in the companion SU10.

This condition can be identified using the startup rate meter. If the startup rate meter is not in service in Mode 6, then the neutron count rate is used for this EAL. The term "sustained" is used in order to allow exclusion of expected short term positive startup rates from planned fuel bundle or control rod movements during core alteration. These short term positive startup rates are the result of the increase in neutron population due to subcritical multiplication.

Escalation would be by Emergency Coordinator Judgment.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CU8

Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

UNPLANNED loss of all onsite or offsite communications capabilities.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level(s): (1 or 2)

1. Loss of all Table C1 onsite communications systems affecting the ability to perform routine operations.

OR

2. Loss of all Table C2 offsite communications systems.

Basis:

The purpose of this IC and its associated EALs is to recognize a loss of communications capability that either defeats the plant operations staff ability to perform routine tasks necessary for plant operations or the ability to communicate problems to offsite authorities. The loss of offsite communications ability is expected to be significantly more comprehensive than the condition addressed by 10 CFR 50.72. The availability of one method of ordinary offsite communications is sufficient to inform state and local authorities of plant problems. This EAL is intended to be used only when extraordinary means (e.g., relaying of information from radio transmissions, individuals being sent to offsite locations, etc.) are being utilized to make communications possible.

Table C1 Onsite Communications Equipment
Plant radio system Plant paging system In-plant telephones Sound powered phones

Table C2 Offsite Communications Equipment
All telephone lines (commercial and microwave) Industrial Hot Line ENS Civil Defense Radios Operational Hotline

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CA1

Initiating Condition – ALERT

Loss of RCS inventory.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**

Emergency Action Level(s): (1 or 2)

1. Loss of RCS inventory as indicated by RVLMS upper plenum level ≤ 20%.

OR

2. a. Loss of RCS inventory as indicated by unexplained containment sump level or reactor drain tank level rise

AND

b. RCS level cannot be monitored > 15 minutes

Basis:

These EALs serve as precursors to a loss of ability to adequately cool the fuel. The magnitude of this loss of water indicates that makeup systems have not been effective and may not be capable of preventing further reactor vessel level decrease and potential core uncovery. This condition will result in a minimum classification of Alert. The Reactor Vessel Level Monitoring System (RVLMS) provides a reading in percentage level remaining in the upper plenum. Procedure OP-001-003, Reactor Coolant System Drain Down, Attachment 11.4 lists the RVLMS sensing element elevations. The area corresponding to 20 % level is at 11.80 ft. MSL (bottom ID of RCS loop determined to be 11.625 ft. MSL from basis for CA2). Therefore a level equal to or below 20% indicates that level has dropped to an area at (or below) the low point of the RCS loop. The inability to restore and maintain level after reaching this setpoint would therefore be indicative of a failure of the RCS barrier.

In cold shutdown the decay heat available to raise RCS temperature during a loss of inventory or heat removal event may be significantly greater than in the refueling mode. Entry into cold shutdown conditions may be attained within hours of operating at power or hours after refueling is completed. Entry into the refueling mode procedurally may not occur for typically 100 hours or longer after the reactor has been shutdown. Thus the heatup threat and therefore the threat to damaging the fuel clad may be lower for events that occur in the refueling mode with irradiated fuel in the reactor vessel (note that the heatup threat could be lower for cold shutdown conditions if the entry into cold shutdown was following a refueling). The above forms the basis for needing both a cold shutdown specific IC (CA1) and a refueling specific IC (CA2).

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CA1

In the cold shutdown mode, normal RCS level and reactor vessel level instrumentation systems will normally be available. However, if all level indication were to be lost during a loss of RCS inventory event, the operators would need to determine that reactor vessel inventory loss was occurring by observing sump and tank level changes. Sump and tank level increases must be evaluated against other potential sources of leakage such as cooling water sources inside the containment to ensure they are indicative of RCS leakage. The 15-minute duration for the loss of level indication was chosen because it is half of the CS1 Site Area Emergency EAL duration. The 15-minute duration allows CA1 to be an effective precursor to CS1. Significant fuel damage is not expected to occur until the core has been uncovered for greater than 1 hour in accordance with the analysis referenced in the CS1 basis. Therefore this EAL meets the definition for an Alert emergency.

The difference between CA1 and CA2 deals with the RCS conditions that exist between cold shutdown and refueling mode applicability. In cold shutdown, the RCS will normally be intact and standard RCS inventory and level monitoring means are available. In the refueling mode, the RCS is not intact and reactor vessel level and inventory are monitored by different means.

If reactor vessel level continues to decrease, then escalation to Site Area Emergency will be via CS1.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CA2

Initiating Condition – ALERT

Loss of reactor vessel inventory with irradiated fuel in the reactor vessel.

Operating Mode Applicability: **Refueling (Mode 6)**

Emergency Action Level(s): (1 or 2)

1. Loss of reactor vessel inventory as indicated by reactor vessel level at 12 ft.

OR

2. a. Loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise

AND

b. Reactor vessel level cannot be monitored > 15 minutes

Basis:

These EALs serve as precursors to a loss of heat removal. The magnitude of this loss of water indicates that makeup systems have not been effective and may not be capable of preventing further reactor vessel level decrease and potential core uncovery. The bottom ID of the RCS Loop is chosen for this IC because at this level remote RCS level indication is lost and loss of normal suction for the shutdown cooling system will occur below this point. RVLMS is not used as an indicator for this EAL because it is not expected to be in service in Mode 6. The bottom ID of the RCS loop is determined to be at 11.625 ft. MSL by the following: The centerline elevation of the RCS hot leg is 13.375' MSL (from drawing 1564-G146), the hot leg piping inside diameter is 42" (from UFSAR section 5.4.3.2), therefore 13.375' – 21" = bottom ID of RCS loop = elevation 11.625' MSL. Other reactor vessel level monitoring systems for mode 6 provide lowest indication in the Control Room at 12.0 ft. MSL (from RCS System Description SD-RCS). Thus the level corresponding to a loss of suction to decay heat removal systems (bottom ID of the RCS loop) for upgrade to an Alert is taken to be 12 ft. MSL for this IC. The inability to restore and maintain level after reaching this setpoint would therefore be indicative of a failure of the RCS barrier.

In cold shutdown the decay heat available to raise RCS temperature during a loss of inventory or heat removal event may be significantly greater than in the refueling mode. Entry into cold shutdown conditions may be attained within hours of operating at power or hours after refueling is completed. Entry into the refueling mode procedurally may not occur for typically 100 hours or longer after the reactor has been shutdown.

Thus the heatup threat and therefore the threat to damaging the fuel clad may be lower for events that occur in the refueling mode with irradiated fuel in the reactor vessel (note that the heatup threat could be lower for cold shutdown conditions if the entry into cold shutdown was following a refueling). The above forms the basis for needing both a cold shutdown specific IC (CA1) and a refueling specific IC (CA2).

In the refueling mode, normal means of reactor vessel level indication may not be available. Redundant means of reactor vessel level indication will be normally installed (including the ability to monitor level visually) to assure that the ability to monitor level will not be interrupted. However, if all level indication were to be lost during a loss of RCS inventory event, the operators would need to determine that reactor vessel inventory loss was occurring by observing sump and tank level changes. Sump and tank level increases must be evaluated against other potential sources of leakage such as cooling water sources inside the containment to ensure they are indicative of RCS leakage. The 15-minute duration for the loss of level indication was chosen because it is half of the CS2 Site Area Emergency EAL duration. The 15-minute duration allows CA2 to be an effective precursor to CS2. Significant fuel damage is not expected to occur until the core has been uncovered for greater than 1 hour in accordance with the analysis referenced in the CS2 basis. Therefore this EAL meets the definition for an Alert.

The difference between CA1 and CA2 deals with the RCS conditions that exist between cold shutdown and refueling mode applicability. In cold shutdown, the RCS will normally be intact and standard RCS inventory and level monitoring means are available. In the refueling mode, the RCS is not intact and reactor vessel level and inventory are monitored by different means.

If reactor vessel level continues to decrease, then escalation to Site Area Emergency will be via CS2.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CA3

Initiating Condition – ALERT

Inability to maintain plant in Cold Shutdown with irradiated fuel in the reactor vessel.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level(s): (1 or 2 or 3)

1. With CONTAINMENT CLOSURE and RCS integrity not established, an UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit.

OR

2. With CONTAINMENT CLOSURE established and RCS integrity not established, or RCS inventory reduced, an UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit for > 20 minutes[1].

OR

3. An UNPLANNED event results in RCS temperature exceeding the Technical Specification cold shutdown temperature limit for > 60 minutes[1] or results in an RCS pressure rise of > 10 psig.

*[1]Note: **If** shutdown cooling is in operation within this time frame **and** RCS temperature is being reduced **then** this EAL is **not** applicable.*

Basis:

This IC and its associated EALs are based on concerns raised by Generic Letter 88-17, "Loss of Decay Heat Removal." A number of phenomena such as pressurization, vortexing, steam generator U-tube draining, RCS level differences when operating at a mid-loop condition, decay heat removal system design, and level instrumentation problems can lead to conditions where decay heat removal is lost and core uncovery can occur. NRC analyses show sequences that can cause core uncovery in 15 to 20 minutes and severe core damage within an hour after decay heat removal is lost.

A loss of Technical Specification components alone is not intended to constitute an Alert. The same is true of a momentary UNPLANNED excursion above the Technical Specification cold shutdown temperature limit when the heat removal function is available.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CA3

The Emergency Coordinator/EOF Director must remain alert to events or conditions that lead to the conclusion that exceeding the EAL threshold is imminent. If, in the judgment of the Emergency Coordinator/EOF Director, an imminent situation is at hand, then the classification should be made as if the threshold has been exceeded.

EAL 1 addresses complete loss of functions required for core cooling during refueling and cold shutdown modes when **neither** CONTAINMENT CLOSURE **nor** RCS integrity are established. RCS integrity is in place when the RCS pressure boundary is in its normal condition to be pressurized (e.g., no freeze seals or nozzle dams). No delay time is allowed for EAL1 because the evaporated reactor coolant that may be released into the Containment during this heatup condition could also be directly released to the environment.

EAL 2 addresses the complete loss of functions required for core cooling for > 20 minutes during refueling and cold shutdown modes when CONTAINMENT CLOSURE is established **but** RCS integrity is **not** established **or** RCS inventory is reduced (e.g., mid loop operation). As in EAL 1, RCS integrity should be assumed to be in place when the RCS pressure boundary is in its normal condition to be pressurized (e.g., no freeze seals or nozzle dams). The allowed 20 minute time frame was included to allow operator action to restore the heat removal function, if possible. The allowed time frame is consistent with the guidance provided by Generic Letter 88-17, "Loss of Decay Heat Removal" and is believed to be conservative given that a low pressure Containment barrier to fission product release is established. Note 1 indicates that EAL 2 is **not** applicable if actions are successful in restoring an RCS heat removal system to operation **and** RCS temperature is being reduced within the 20 minute time frame.

EAL 3 addresses complete loss of functions required for core cooling for > 60 minutes during refueling and cold shutdown modes when RCS integrity is established. As in EAL 1 and 2, RCS integrity should be considered to be in place when the RCS pressure boundary is in its normal condition to be pressurized (e.g., no freeze seals or nozzle dams). The status of CONTAINMENT CLOSURE in this EAL is immaterial given that the RCS is providing a high pressure barrier to fission product release to the environment. The 60 minute time frame should allow sufficient time to restore cooling without there being a substantial degradation in plant safety. The 10 psig pressure increase covers situations where, due to high decay heat loads, the time provided to restore temperature control should be less than 60 minutes. The RCS pressure setpoint can be read on installed control board instrumentation. Note 1 indicates that EAL 3 is **not** applicable if actions are successful in restoring a shutdown cooling system to operation **and** RCS temperature is being reduced within the 60 minute time frame **assuming that the RCS pressure increase has remained LESS THAN 10 psig.**

Escalation to Site Area Emergency would be via CS1 or CS2 should boiling result in significant reactor vessel level loss leading to core uncovery.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CA5

Initiating Condition – ALERT

Loss of all offsite power and loss of all onsite AC power to essential busses.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)
Defueled

Emergency Action Level(s):

1. a. Loss of power to all unit auxiliary and startup transformers

AND

b. Failure of the 'A' and 'B' emergency diesel generators to supply power to emergency busses

AND

c. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss of both offsite and onsite AC power.

Basis:

Loss of all AC power compromises all plant safety systems requiring electric power including shutdown cooling, emergency core cooling, containment cooling, spent fuel pool cooling and the ultimate heat sink. When in cold shutdown, refueling, or defueled mode the event can be classified as an Alert, because of the significantly reduced decay heat and lower temperature and pressure which allow increasing the time to restore one of the emergency busses, relative to that specified for the Site Area Emergency EAL. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses. Escalating to Site Area Emergency, if appropriate, is by Abnormal Radiation Levels / Radiological Effluents (AS1), or Emergency Coordinator/EOF Director Judgment EALs.

Consideration should be given to available loads necessary to remove decay heat or provide reactor vessel makeup capability when evaluating loss of AC power to essential busses. Even though an essential bus may be energized, if necessary loads (i.e., loads that if lost would inhibit decay heat removal capability or reactor vessel makeup capability) are not operable on the energized bus, then the bus should not be considered available.

Credit for Temporary Emergency Diesel Generators (TEDs) may **NOT** be taken because they are not a credited power source in the Technical Specifications for modes 5 and 6.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CS1

Initiating Condition – SITE AREA EMERGENCY

Loss of reactor vessel inventory affecting core decay heat removal capability.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**

Emergency Action Level(s): (1 or 2)

1. With CONTAINMENT CLOSURE not established:

   a. Reactor vessel inventory as indicated by RVLMS upper plenum level 0%.

OR

   b. Reactor vessel level cannot be monitored > 30 minutes with a loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise.

OR

2. With CONTAINMENT CLOSURE established:

   Reactor vessel level cannot be monitored > 30 minutes with a loss of reactor vessel inventory as indicated by either:
   - Unexplained containment sump or reactor drain tank level rise.
   - Erratic Source Range Monitor indication.

Basis:

Under the conditions specified by this IC, continued decrease in reactor vessel level is indicative of a loss of inventory control. Inventory loss may be due to a reactor vessel breach, pressure boundary leakage, or continued boiling in the reactor vessel.

In cold shutdown the decay heat available to raise RCS temperature during a loss of inventory or heat removal event may be significantly greater than in the refueling mode . Entry into cold shutdown conditions may be attained within hours of operating at power or hours after refueling is completed. Entry into the refueling mode procedurally may not occur for typically 100 hours or longer after the reactor has been shutdown. Thus the heatup threat and therefore the threat to damaging the fuel clad may be lower for events that occur in the refueling mode with irradiated fuel in the reactor vessel (note that the heatup threat could be lower for cold shutdown conditions if the entry into cold shutdown was following a refueling). The above forms the basis for needing both a cold shutdown specific IC (CS1) and a refueling specific IC (CS2).

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CS1

In the cold shutdown mode, normal RCS level and reactor vessel level indication systems will normally be available. However, If all reactor vessel level indication were to be lost during a loss of RCS inventory event, the operators would need to determine that reactor vessel inventory loss was occurring by observing containment sump level or reactor drain tank level changes. Containment sump level or reactor drain tank level increases must be evaluated against other potential sources of leakage such as cooling water sources inside the containment to ensure they are indicative of RCS leakage.

These EALs are based on concerns raised by Generic Letter 88-17, *Loss of Decay Heat Removal*, SECY 91-283, *Evaluation of Shutdown and Low Power Risk Issues*, NUREG-1449, *Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States*, and, NUMARC 91-06, *Guidelines for Industry Actions to Assess Shutdown Management.* A number of variables, (mid-loop, reduced level/flange level, head in place, or cavity flooded, RCS venting strategy, decay heat removal system design, vortexing pre-disposition, steam generator U-tube draining) can have a significant impact on heat removal capability challenging the fuel clad barrier. Analysis in the above references indicates that core damage may occur within an hour following continued core uncovery therefore, conservatively, 30 minutes was chosen.

The Reactor Vessel Level Monitoring System (RVLMS) provides a reading in percentage level remaining in the upper plenum. A 0% level is the first observable point below 6" below the bottom ID of the RCS loop penetration in the reactor vessel (NEI 99-01 guidance) but is at a point higher than the Top of Active Fuel (TOAF) at its location 12.6" above the fuel alignment plate (from RCS System Description SD-RCS). Procedure OP-001-003, Reactor Coolant System Drain Down, Attachment 11.4 lists the RVLMS sensing element elevations. The area corresponding to 0% level is at 10.10 ft. MSL (bottom ID of RCS loop determined to be 11.625 ft. MSL from basis for CA2 with 6" below that point at 11.125 ft. MSL). Therefore a 0% level indicates that level has dropped to an area at (or below) the low point of the RCS loop. The inability to restore and maintain level after reaching this setpoint would therefore be indicative of a failure of the RCS barrier.

The 30-minute duration allowed when CONTAINMENT CLOSURE is established allows sufficient time for actions to be performed to recover needed cooling equipment and is considered to be conservative given that level is being monitored via CS1 and CS2. Effluent release is not expected with closure established.

Escalation to a General Emergency is via CG1 or radiological effluent IC AG1.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CS2

Initiating Condition – SITE AREA EMERGENCY

Loss of reactor vessel inventory affecting core decay heat removal capability with irradiated fuel in the reactor vessel.

Operating Mode Applicability: **Refueling (Mode 6)**

Emergency Action Level(s):

1. Reactor vessel level cannot be monitored WITH indication of core uncovery as evidenced by one or more of the following:

- Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) $\geq$ 10R/hr
- Erratic Source Range Monitor indication
- Core Exit Thermocouples indicate superheat

Basis:

Under the conditions specified by this IC, continued decrease in reactor vessel level is indicative of a loss of inventory control. Inventory loss may be due to a reactor vessel breach or continued boiling in the reactor vessel.

In cold shutdown the decay heat available to raise RCS temperature during a loss of inventory or heat removal event may be significantly greater than in the refueling mode Entry into cold shutdown conditions may be attained within hours of operating at power or hours after refueling is completed. Entry into the refueling mode procedurally may not occur for typically 100 hours or longer after the reactor has been shutdown. Thus the heatup threat and therefore the threat to damaging the fuel clad may be lower for events that occur in the refueling mode with irradiated fuel in the reactor vessel (note that the heatup threat could be lower for cold shutdown conditions if the entry into cold shutdown was following a refueling). The above forms the basis for needing both a cold shutdown specific IC (CS1) and a refueling specific IC (CS2).

These example EALs are based on concerns raised by Generic Letter 88-17, Loss of Decay Heat Removal, SECY 91-283, Evaluation of Shutdown and Low Power Risk Issues, NUREG-1449, Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States, and, NUMARC 91-06, Guidelines for Industry Actions to Assess Shutdown Management. A number of variables, (e.g., mid-loop, reduced level/flange level, head in place, or cavity flooded, RCS venting strategy, decay heat removal system design, vortexing pre-disposition, steam generator U-tube draining) can have a significant impact on heat removal capability challenging the fuel clad barrier. Analysis in the above references indicates that core damage may occur within an hour following continued core uncovery therefore, conservatively, 30 minutes was chosen.

Normal means of reactor vessel level indication may not be available. Redundant means of reactor vessel level indication will be normally installed (including the ability to monitor level visually) to assure that the ability to monitor level will not be interrupted.

RVLMS is not used as an indicator for this EAL because it is not expected to be in service in Mode 6. Other reactor vessel level monitoring systems for mode 6 provide lowest indication at 12.0 ft. MSL which is slightly above the bottom ID of the RCS loop penetration to the reactor vessel. Therefore, an indication that the water level has dropped to any point below the bottom of the RCS loop penetration in the reactor vessel is not available in mode 6 and an EAL is selected that uses inability to monitor reactor vessel level.

As water level in the reactor vessel lowers, the dose rate above the core will increase. The dose rate due to this core shine should result in up-scaled Containment High Range Monitor indication and possible alarm. A reading of greater than or equal to 10 R/hr may be indicative of fuel damage. The basis for 10 R/hr is that it is sufficiently above the normal indication of 0.74 R/hr (nominal shutdown) to avoid an unnecessary entry into the EAL but substantially lower than the calculated values for RCS barrier failure (100 R/hr) and fuel clad barrier failure (1000 R/hr) for barrier losses in Section F(Fission Product Barrier) to give an early indication of vessel level lowering to the point of potential fuel damage. The 10 R/hr is also high enough to be indicative of potential fuel uncovery. Additionally, post-TMI studies indicated that the installed nuclear instrumentation will operate erratically when the core is uncovered and that this should be used as a tool for making such determinations.

Effluent release is not expected if containment closure is established.

Escalation to a General Emergency is via CG1 or radiological effluent IC AG1.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CG1

Initiating Condition – GENERAL EMERGENCY

Loss of reactor vessel inventory affecting fuel clad integrity with containment challenged with irradiated fuel in the reactor vessel.

Operating Mode Applicability: **Cold Shutdown (Mode 5)**
Refueling (Mode 6)

Emergency Action Level(s): (1 and 2 and 3)

1. Loss of reactor vessel inventory as indicated by unexplained containment sump level or reactor drain tank level rise

AND

2. Reactor vessel level cannot be monitored with indication of core uncovery > 30 minutes as evidenced by one or more of the following:
   - Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) ≥ 10R/hr
   - Erratic Source Range Monitor indication
   - Core Exit Thermocouples indicate superheat

AND

3. Indication of CONTAINMENT challenged as indicated by one or more of the following:
   - Explosive mixture inside containment
   - Containment pressure > 50 PSIA
   - CONTAINMENT CLOSURE not established

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CG1

Basis:

During an outage, installed RCS level and REACTOR VESSEL level instrumentation systems will normally be available when the RCS is filled and redundant means of REACTOR VESSEL level indication will be normally installed (including the ability to monitor level visually) to assure that the ability to monitor level will not be interrupted when the RCS is not filled. EAL #1 assumes, if all level indication were to be lost during a loss of RCS inventory event, the operators would need to determine that REACTOR VESSEL inventory loss was occurring by observing sump and tank level changes. Sump and tank level increases must be evaluated against other potential sources of leakage such as cooling water sources inside the containment to ensure they are indicative of RCS leakage.

EAL 2 represents the inability to restore and maintain reactor vessel level to above the top of active fuel. Fuel damage is probable if reactor vessel level cannot be restored, as available decay heat will cause boiling, further reducing the reactor vessel level.

These EALs are based on concerns raised by Generic Letter 88-17, *Loss of Decay Heat Removal*, SECY 91-283, *Evaluation of Shutdown and Low Power Risk Issues*, NUREG-1449, *Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States*, and, NUMARC 91-06, *Guidelines for Industry Actions to Assess Shutdown Management.* A number of variables, (e.g., mid-loop, reduced level/flange level, head in place, or cavity flooded, RCS venting strategy, decay heat removal system design, vortexing pre-disposition, steam generator U-tube draining) can have a significant impact on heat removal capability challenging the fuel clad barrier. Analysis in the above references indicates that core damage may occur within an hour following continued core uncovery therefore, conservatively, 30 minutes was chosen.

As water level in the reactor vessel lowers, the dose rate above the core will increase. The dose rate due to this core shine should result in up-scaled Containment High Range Monitor indication. The basis for 10 R/hr is that it is sufficiently above the normal indication of 0.74 R/hr (nominal shutdown) to avoid an unnecessary entry into the EAL but substantially lower than the calculated values for RCS barrier failure (100 R/hr) and fuel clad barrier failure (1000 R/hr) for barrier losses in Section F (Fission Product Barrier) to give an early indication of vessel level lowering to the point of potential fuel damage. The 10 R/hr is also high enough to be indicative of potential fuel uncovery. Additionally, post-TMI studies indicated that the installed nuclear instrumentation will operate erratically when the core is uncovered and that this should be used as a tool for making such determinations.

COLD SHUTDOWN/REFUELING SYSTEM MALFUNCTION

CG1

The GE is declared on the occurrence of the loss or imminent loss of function of all three barriers. Based on the above discussion, RCS barrier failure resulting in core uncovery for 30 minutes or more may cause fuel clad failure. With the CONTAINMENT breached or challenged then the potential for unmonitored fission product release to the environment is high. This represents a direct path for radioactive inventory to be released to the environment. This is consistent with the definition of a GE.

In the context of EAL 3, CONTAINMENT CLOSURE is the action taken to secure containment and its associated structures, systems, and components as a functional barrier to fission product release under existing plant (shutdown) conditions. Site shutdown contingency plans provide for re-establishing CONTAINMENT CLOSURE following a loss of heat removal or RCS inventory functions. If the closure is re-established prior to exceeding the temperature or level thresholds of the RCS Barrier and Fuel Clad Barrier EALs, then escalation to GE would **not** occur.

The pressure at which CONTAINMENT is considered challenged is based on the condition of the CONTAINMENT. If the CONTAINMENT is fully intact, then the CONTAINMENT will be challenged at the design pressure of 44 psig (~59 psia). Because the EOPs use 50 psia as a safety function parameter following a LOCA, this is the value used in the EAL. This is consistent with the owner's groups Emergency Response Procedures. If CONTAINMENT CLOSURE is established, the EAL setpoint is based on an estimate of the pressure CONTAINMENT CLOSURE would be able to sustain. Waterford estimates this pressure to be the design pressure because of the closure actions taken.

In the early stages of a core uncovery event, it is unlikely that hydrogen buildup due to a core uncovery could result in an explosive mixture of dissolved gasses in CONTAINMENT. However, CONTAINMENT monitoring and/or sampling should be performed to verify this assumption and a General Emergency declared if it is determined that an explosive mixture exists. Existence of an explosive mixture means a hydrogen and oxygen concentration of at least the lower deflagration limit curve exists (refer to Severe Accident Management Guidelines Calculation Aid #7, Containment Challenge due to Hydrogen Combustion).

FISSION PRODUCT BARRIER DEGRADATION

FISSION PRODUCT BARRIER DEGRADATION

FU1 – Initiating Condition – NOTIFICATION OF UNUSUAL EVENT

ANY loss or ANY Potential Loss of Containment.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

FA1 – Initiating Condition – Alert

ANY loss or ANY Potential Loss of EITHER Fuel Clad or RCS

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

FS1 – Initiating Condition – Site Area Emergency

Loss or Potential Loss of ANY two Barriers

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

FG1 – Initiating Condition – General Emergency

Loss of ANY two Barriers AND Loss or Potential Loss of Third barrier

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

FISSION PRODUCT BARRIER DEGRADATION

General Bases:

The logic used for these Initiating Conditions reflects the following considerations:

- The Fuel Clad Barrier and the RCS Barrier are weighted more heavily than the Containment Barrier. Unusual Event ICs associated with RCS and Fuel Clad Barriers are addressed under System Malfunction (S) ICs.

- At the Site Area Emergency level, there must be some ability to dynamically assess how far present conditions are from the threshold for a General Emergency. For example, if Fuel Clad and RCS Barrier "Loss" EALs existed, that, in addition to offsite dose assessments, would require continual assessments of radioactive inventory and containment integrity. Alternatively, if both Fuel Clad and RCS "Potential Loss" EALs existed, the Emergency Coordinator/EOF Director would have more assurance that there was no immediate need to escalate to a General Emergency.

- The ability to escalate to higher emergency classes as an event deteriorates must be maintained. For example, RCS leakage steadily increasing would represent an increasing risk to public health and safety.

  a. Fission Product Barrier ICs must be capable of addressing event dynamics. Thus, the Note associated with the ICs in the EAL Matrix provides guidance that imminent (i.e., within 1 to 2 hours) Loss or Potential Loss should result in a classification as if the affected threshold(s) are already exceeded, particularly for the higher emergency classes.

FISSION PRODUCT BARRIER DEGRADATION

Fuel Clad Barrier Emergency Action Levels:

The Fuel Clad Barrier is the zircalloy or stainless steel tubes that contain the fuel pellets.

Primary Coolant Activity Level (FCB1)

Loss: RCS Dose Equivalent Iodine > 300 µCi/gm as indicated by:

a. Dose Rate at one foot from Primary Sample Panel > 950 mR/hr

OR

b. -4 RAB RADIOCHEMISTRY LAB area radiation monitor (ARM-IRE-5020) > 125 mR/hr

OR

c. Chemistry sample results

Potential Loss: Not Applicable

Basis:

The radiation monitor values given are assumed valid when the primary sample panel valves are open receiving flow from the RCS.

The radiation monitor values were determined by calculating various coolant radionuclide concentrations postulated to result from a 10% gap inventory release at Waterford 3. This alternate method to PASS sampling of determining fuel degradation was developed in HP-CALC-2001-001, PASS Elimination and accepted by NRC when Waterford 3 eliminated the PASS. This amount of coolant activity is well above that expected for iodine spikes and corresponds to less than 5% fuel clad damage. This amount of radioactivity indicates significant clad damage and thus the Fuel Clad Barrier is considered lost.

There is no equivalent "Potential Loss" EAL for this item.

FISSION PRODUCT BARRIER DEGRADATION

Fuel Clad Barrier Emergency Action Levels:

Core Exit Thermocouple Readings (FCB2)

Loss: Core Exit Thermocouple readings ≥ 1200 degrees F

Potential Loss: Core Exit Thermocouple readings ≥ 700 degrees F

Basis:

The Loss EAL of ≥ 1200° F is consistent with the NEI 99-01. The elevated temperature corresponds to significant superheating of the coolant and is indicative of a loss of the Fuel Clad Barrier. Other references (EC-S98-001, "EOP Action Value Bases" and CE-NPSD-241, "Development of the Comprehensive Procedure Guideline for Core Damage Assessment," Task 467) indicate that clad rupture due to high temperature is not expected for CET temperature readings of less than 1200° F.

The Potential Loss setpoint of CET temperatures ≥ 700° F is consistent with Emergency Operating Procedures (EOPs) and is used as an indication of a loss of subcooling conditions in the RCS. It is consistent with the criteria developed in NEI 99-01. The elevated temperature corresponds to a loss of subcooling and is indicative of a Potential Loss of the Fuel Clad Barrier. This criteria is supplemented by further plant specific criteria for diagnosis of loss of subcooling given in Potential Loss EAL FCB3.

FISSION PRODUCT BARRIER DEGRADATION

Fuel Clad Barrier Emergency Action Levels:

Reactor Vessel Water Level (FCB3)

Loss: Not Applicable

Potential Loss: RVLMS upper plenum level 0%.

Basis:

There is no "Loss" EAL corresponding to this item because it is better covered by the other Fuel Clad Barrier "Loss" EALs.

As part of its Inadequate Core Cooling Instrumentation, Waterford 3 uses a Reactor Vessel Level Monitoring System (RVLMS) that is displayed to the operators and can measure water level from near the top of the active fuel. The lowest point where monitoring is provided in this system is 12.6" above the fuel alignment plate. This monitoring point is equal to 0% upper plenum RVLMS level. This is consistent with the EOPs as follows: The Waterford 3 EOPs, in OP-902-008, Functional Recovery, use an acceptance criteria for RCS and core heat removal of RVLMS upper plenum level $\geq$ 20%. If the level is below 20%, then contingency actions must be taken and the criterion is considered not met. The next discrete measurement point below 20% upper plenum level is 0% level.

FISSION PRODUCT BARRIER DEGRADATION

Fuel Clad Barrier Emergency Action Levels:

Containment Radiation Monitoring (FCB4)

Loss: Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) > 1000 R/hr.

Potential Loss: Not Applicable

Basis:

This reading is a value which indicates the release of reactor coolant, with elevated activity indicative of fuel damage, into the containment. The reading is calculated assuming the instantaneous release and dispersal of the reactor coolant noble gas and iodine inventory associated with a concentration of 300 µCi/gm dose equivalent I-131 into the containment atmosphere. Reference Waterford 3 Engineering Calculation EC-S03-008. Source documents are HP-CALC-93-005, "Containment Atmosphere Radiation Monitor Setpoint Calculation," NUREG 1228, "Source Term Estimation During Incident Response to Severe Nuclear Power Plant Accidents" and EC-S98-002, "Waterford 3 Chapter 15 Non-LOCA Dose Calculation." It assumes normal (NUREG 1228) gas gap fractions, leak into RCS and then into containment, and containment spray initiation impact. Reactor coolant concentrations of this magnitude are several times larger than the maximum concentrations (including iodine spiking) allowed within Technical Specifications and are therefore indicative of fuel damage. This radiation monitor value is higher than that specified for RCS barrier Loss EAL **RCB3**. Thus, this EAL indicates a loss of **both** the fuel clad barrier **and** a loss of the RCS barrier.

There is no "Potential Loss" EAL associated with this item.

FISSION PRODUCT BARRIER DEGRADATION

Fuel Clad Barrier Emergency Action Levels:

Emergency Coordinator/EOF Director Judgment (FCB5)

Any condition in the opinion of the Emergency Coordinator/EOF Director that indicates Loss or Potential Loss of the Fuel Clad Barrier.

Basis:

This EAL addresses any other factors that are to be used by the Emergency Coordinator/EOF Director in determining whether the Fuel Clad barrier is lost or potentially lost. An event or multiple events could occur which result in the conclusion that exceeding the loss or potential loss thresholds is imminent (i.e., within 1 to 2 hours). In this imminent loss situation, use judgment and classify as if the thresholds are exceeded. In addition, the inability to monitor the barrier is also incorporated in this EAL as a factor in Emergency Coordinator/EOF Director judgment that the barrier may be considered lost or potentially lost. *(See also SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power", for additional information.)*

FISSION PRODUCT BARRIER DEGRADATION

RCS Barrier Emergency Action Levels:

The RCS Barrier includes the RCS primary side and its connections up to and including the pressurizer safety and relief valves, and other connections up to and including the primary isolation valves.

RCS Leak Rate (RCB1)

Loss: RCS leak rate GREATER THAN available makeup capacity as indicated by RCS subcooling < 28° F.

Potential Loss: Unisolable RCS leak > 44 gpm.

Basis:

The "Loss" EAL addresses conditions where leakage from the RCS is greater than available inventory control capacity such that a loss of subcooling has occurred. The loss of subcooling is the fundamental indication that the inventory control systems are inadequate in maintaining RCS pressure and inventory against the mass loss through the leak.

The "Potential Loss" EAL is based on the inability to maintain normal liquid inventory within the RCS by normal operation of the Chemical and Volume Control System which is considered as one charging pump discharging to the charging header. A second charging pump being required is indicative of a substantial RCS leak.

FISSION PRODUCT BARRIER DEGRADATION

RCS Barrier Emergency Action Levels:

SG Tube Rupture (RCB2)

Loss: SGTR that results in an ECCS (SI) actuation

Potential Loss: Not Applicable

Basis:

This EAL is intended to address the full spectrum of Steam Generator (SG) tube rupture events in conjunction with Containment Barrier "Loss" EAL **CNB3** and Fuel Clad Barrier EALs. The "Loss" EAL addresses RUPTURED SG(s) for which the leakage is large enough to cause actuation (either automatic or manual) of ECCS (SI) This is consistent to the RCS Barrier "Potential Loss" EAL **RCB1**. By itself, this EAL will result in the declaration of an Alert. However, if the SG is also FAULTED (i.e., two barriers failed), the declaration escalates to a Site Area Emergency in accordance with Containment Barrier "Loss" EAL **CNB3**.

There is no "Potential Loss" EAL.

FISSION PRODUCT BARRIER DEGRADATION

RCS Barrier Emergency Action Levels:

Containment Radiation Monitoring (RCB3)

Loss: Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) > 100 R/hr.

Potential Loss: Not Applicable

Basis:

The specific radiation monitor reading is a value which indicates the release of reactor coolant to the containment. The reading was calculated assuming the instantaneous release and dispersal of the reactor coolant noble gas and iodine inventory associated with normal operating concentrations (i.e., within Technical Specifications) into the containment atmosphere. Reference Waterford 3 Engineering Calculation EC-S03-008. Source documents used for the determination of this monitor reading are NUREG 1228, "Source Term Estimation During Incident Response to Severe Nuclear Power Plant Accidents" and EC-S98-002, "Waterford 3 Chapter 15 Non-LOCA Dose Calculation." This reading is less than that specified for Fuel Clad Barrier EAL **FCB4**. Thus, this EAL is indicative of a RCS leak only. If the radiation monitor reading increased to that specified by Fuel Clad Barrier EAL **FCB4**, then fuel damage is indicated.

There is no "Potential Loss" EAL associated with this item.

FISSION PRODUCT BARRIER DEGRADATION

RCS Barrier Emergency Action Levels:

Other Indications (RCB4)

Loss: Not Applicable

Potential Loss: RCS pressure dropping due to primary relief not reseating

Basis:

The setpoint for the pressurizer code safety valves is 2500 psia +/- 3%. Their purpose is to provide RCS overpressure protection. The safety valves pass sufficient pressurizer steam to limit the RCS pressure to 2750 psia (110 % of design) following a complete loss of turbine generator load without simultaneous reactor trip. In the event of a primary relief valve lifting and not reseating the loss of mass inventory of the RCS is large enough to uncover the core in a short period of time.
Source document: Technical Specifications sections 3.4.2.1 and 3.4.2.2.

FISSION PRODUCT BARRIER DEGRADATION

RCS Barrier Emergency Action Levels:

Other Indications (RCB)

Emergency Coordinator/EOF Director Judgment (RCB5)

Any condition in the opinion of the Emergency Coordinator/EOF Director that indicates Loss or Potential Loss of the RCS Barrier.

Basis:

This EAL addresses any other factors that are to be used by the Emergency Coordinator/EOF Director in determining whether the RCS barrier is lost or potentially lost. An event or multiple events could occur which result in the conclusion that exceeding the loss or potential loss thresholds is imminent (i.e., within 1 to 2 hours). In this imminent loss situation, use judgment and classify as if the thresholds are exceeded. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Coordinator/EOF Director judgment that the barrier may be considered lost or potentially lost. *(See also SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power", for additional information.)*

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

The Containment Barrier includes the containment building, its connections up to and including the outermost containment isolation valves. This barrier also includes the main steam, feedwater, and blowdown line extensions outside the containment building up to and including the outermost secondary side isolation valve.

Containment Pressure (CNB1)

Loss: Rapid unexplained drop following initial rise

OR

Containment parameters not consistent with LOCA conditions

Potential Loss:

Containment pressure 50 PSIA and rising

OR

Explosive mixture exists

OR

Containment pressure > 17.7 PSIA with LESS THAN one full train of Containment Spray operating (1750 gpm)

Basis:

Rapid unexplained loss of pressure (i.e., not attributable to containment spray or condensation effects) following an initial pressure increase indicates a loss of containment integrity. Containment pressure and sump levels should increase as a result of the mass and energy release into containment from a LOCA. Thus, sump level or pressure not increasing indicates containment bypass and a loss of containment integrity.

The Containment pressure used for potential loss of containment is based on the containment design pressure. Existence of an explosive mixture means a hydrogen and oxygen concentration of at least the lower deflagration limit curve exists (refer to Severe Accident Management Guidelines Calculation Aid #7, Containment Challenge due to Hydrogen Combustion). This EAL is primarily a discriminator between Site Area Emergency and General Emergency representing a potential loss of the third barrier following a LOCA.

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

Containment Pressure (CNB1)

The last potential loss EAL represents a potential loss of containment in that the containment heat removal/depressurization system (Containment Spray, but not including containment venting strategies) are either lost or performing in a degraded manner, as indicated by containment pressure greater than the setpoint at which the equipment was supposed to have actuated or Containment Spray pump providing LESS THAN 1750 gpm flow. Credit is not taken for Containment Fan Coolers in this EAL as mitigating Containment Spray losses.

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

Core Exit Thermocouples (CNB2)

Loss: Not Applicable

Potential Loss:

Core exit thermocouples >1200 degrees F and restoration procedures not effective within 15 minutes

OR

Core exit thermocouples > 700 degrees F with RVLMS upper plenum level equal to 0% or LOWER and restoration procedures not effective within 15 minutes

Basis:

In this EAL, the functional restoration procedures are those emergency operating procedures that address the recovery of the core cooling critical safety functions. The procedure is considered effective if the temperature is decreasing **or** if the vessel water level is increasing.

Severe accident analyses (e.g., NUREG-1150) have concluded that function restoration procedures can arrest core degradation within the reactor vessel in a significant fraction of the core damage scenarios, and that the likelihood of containment failure is very small in these events. Given this, it is appropriate to provide a reasonable period to allow function restoration procedures to arrest the core melt sequence. Whether or not the procedures will be effective should be apparent within 15 minutes. The Emergency Coordinator/EOF Director should make the declaration as soon as it is determined that the procedures have been, or will be ineffective.

The conditions in this potential loss EAL represent an imminent core melt sequence which, if not corrected, could lead to vessel failure and an increased potential for containment failure. In conjunction with the Core Cooling and Heat Sink criteria in the Fuel and RCS barrier columns, this EAL would result in the declaration of a General Emergency – loss of two barriers and the potential loss of a third. If the function restoration procedures are ineffective, then there is no "success" path.

There is no "Loss" EAL associated with this item.

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

SG Secondary Side Release With Primary to Secondary Leakage (CNB3)

Loss: Ruptured S/G is also faulted outside of containment

OR

Loss: Primary-to-Secondary leakrate >10 gpm with nonisolable steam release from affected S/G to the environment

Potential Loss: Not Applicable

Basis:

This "loss" EAL recognizes that SG tube leakage can represent a bypass of the containment barrier as well as a loss of the RCS barrier. The first "loss" EAL addresses the condition in which a RUPTURED (primary-to-secondary leakage of a magnitude sufficient to require or cause a reactor trip and safety injection) steam generator is also FAULTED (secondary side leakage that results in an uncontrolled decrease in steam generator pressure or the steam generator being completely depressurized). This condition represents a bypass of the RCS and containment barriers. In conjunction with RCS Barrier "loss" EAL **RCB2**, this would always result in the declaration of a Site Area Emergency.

The second "loss" EAL addresses SG tube leaks that exceed 10 gpm in conjunction with a nonisolable release path to the environment from the affected steam generator. The threshold for establishing the nonisolable secondary side release is intended to be a prolonged release of radioactivity from the RUPTURED steam generator directly to the environment. This could be expected to occur when the main condenser is unavailable to accept the contaminated steam (i.e., SGTR with concurrent loss of offsite power and the RUPTURED steam generator is required for plant cooldown or a stuck open relief valve or failed open atmospheric dump valve).

If the main condenser is available, then there may be releases via air ejectors, gland seal exhausters, and other similar controlled, and often monitored, pathways. Also, releases from the Steam Driven Emergency Feedwater Pump Turbine result in a very small minor release that can be isolated with the MS-401A and B valves. These pathways do **not** meet the intent of a nonisolable release path to the environment. These minor releases are assessed using Abnormal Radiation Levels / Radiological Effluents EALs.

A pressure boundary leakage of 10 gpm was used as the threshold in SU7 and is deemed appropriate for this EAL. For smaller breaks, not exceeding the normal

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

SG Secondary Side Release With Primary to Secondary Leakage (CNB3)

charging capacity threshold in RCS Barrier "Potential Loss" EAL **RCB1** (RCS Leak Rate) or not resulting in ECCS actuation in EAL **RCB2** (SG Tube Rupture), this EAL results in a NOUE. For larger breaks, RCS barrier EALs **RCB1** and **RCB2** would result in an Alert. For SG tube ruptures which may involve multiple steam generators or unisolable secondary line breaks, this EAL would exist in conjunction with RCS barrier "Loss" EAL **RCB2** and would result in a Site Area Emergency. Escalation to General Emergency would be based on "Potential Loss" of the Fuel Clad Barrier.

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

Containment Isolation Valve Status After Containment Isolation (CNB4)

Loss: Unisolable breach of containment with a direct release path to the environment following containment isolation actuation.

Potential Loss: Not Applicable

Basis:

This EAL is intended to address incomplete containment isolation that allows direct release to the environment. It represents a loss of the containment barrier.

The use of the modifier "direct" in defining the release path discriminates against release paths through interfacing liquid systems. The existence of an in–line charcoal filter does **not** make a release path indirect since the filter is not effective at removing fission noble gases. Typical filters have an efficiency of 95-99% removal of iodine. Given the magnitude of the core inventory of iodine, significant releases could still occur. In addition, since the fission product release would be driven by boiling in the reactor vessel, the high humidity in the release stream can be expected to render the filters ineffective in a short period. Therefore, a failure of a containment penetration in the annulus with frequent cycling of the shield building ventilation system (a filtered release path) meets the loss criteria of this EAL and constitutes a loss of the containment barrier.

There is no "Potential Loss" EAL associated with this item.

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

Significant Radioactive Inventory in Containment (CNB5)

Loss: Not Applicable

Potential Loss: Containment High Range Radiation Monitor (ARM-IRE-5400AS or ARM-IRE-5400BS) > 4000 R/hr.

Basis:

The containment high range radiation monitor reading is a value which indicates significant fuel damage well in excess of the EALs associated with both loss of Fuel Clad and loss of RCS Barriers. A major release of radioactivity requiring offsite protective actions from core damage is not possible unless a major failure of fuel cladding allows radioactive material to be released from the core into the reactor coolant.

Regardless of whether containment is challenged, this amount of activity in containment, if released, could have such severe consequences that it is prudent to treat this as a potential loss of containment, such that a General Emergency declaration is warranted. Because the monitor reading exceeds the readings for Fuel Clad Barrier loss in **FCB4** and RCS Barrier loss in **RCB3**, the Emergency Coordinator/EOF Director should declare a General Emergency when this value on the Containment High Range Radiation Monitor is exceeded as a loss of two barriers (fuel clad and RCS) and potential loss of the third (containment). NUREG-1228, "Source Estimations During Incident Response to Severe Nuclear Power Plant Accidents," indicates that such conditions do not exist when the amount of clad damage is less than 20%. The radiation monitor reading specified corresponds to approximately 20% fuel clad damage. Reference Waterford 3 Engineering Calculation EC-S03-008.

There is no "Loss" EAL associated with this item.

FISSION PRODUCT BARRIER DEGRADATION

Containment Barrier Emergency Action Levels:

Emergency Coordinator/EOF Director Judgment (CNB6)

Any condition in the opinion of the Emergency Coordinator/EOF Director that indicates Loss or Potential Loss of the Containment barrier.

Basis:

This EAL addresses any other factors that are to be used by the Emergency Coordinator/EOF Director in determining whether the Containment barrier is lost or potentially lost. An event or multiple events could occur which result in the conclusion that exceeding the loss or potential loss thresholds is imminent (i.e., within 1 to 2 hours). In this imminent loss situation, use judgment and classify as if the thresholds are exceeded. In addition, the inability to monitor the barrier should also be incorporated in this EAL as a factor in Emergency Coordinator/EOF Director judgment that the barrier may be considered lost or potentially lost. *(See also SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power", for additional information.)*

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HU1

Confirmed SECURITY CONDITION or threat which indicates a potential degradation in the level of safety of the plant.

Operating Mode Applicability: **All**

Emergency Action Level(s): (1 or 2 or 3)

1. A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Waterford 3 Security Shift Supervision

OR

2. A credible site specific security threat notification

OR

3. A validated notification from NRC providing information of an aircraft threat .

Basis:

NOTE: Timely and accurate communication between Security Shift Supervision and the Control Room is crucial for the implementation of effective Security EALs.

Security events which do not represent a potential degradation in the level of safety of the plant are reported under 10 CFR 73.71 or in some cases under 10 CFR 50.72. Security events assessed as HOSTILE ACTIONS are classifiable under HA1, HS1 and HG1_.

A higher initial classification could be made based upon the nature and timing of the security threat and potential consequences. Consideration shall be given to upgrading the emergency response status and emergency classification in accordance with the Safeguards Contingency Plan and Emergency Plan.

EAL #1

The Security Shift Supervisor is the designated individual on-site qualified and trained to confirm that a security event is occurring or has occurred. Training on security event classification confirmation is closely controlled due to the strict secrecy controls placed on the plant Safeguards Contingency Plan.

This threshold is based on the Safeguards Contingency Plan. The Safeguards Contingency Plan is based on guidance provided in NEI 03-12.

EAL #2

This threshold is included to ensure that appropriate notifications for the security threat are made in a timely manner. This includes information of a credible threat. Only the plant to which the specific threat is made need declare the Notification of Unusual Event.

EAL #3

The intent of this EAL is to ensure that notifications for the aircraft threat are made in a timely manner and that Offsite Response Organizations and plant personnel are at a state of heightened awareness regarding the credible threat. It is not the intent of this EAL to replace existing non-hostile related EALs involving aircraft.

This EAL is met when a plant receives information regarding an aircraft threat from NRC. Validation is performed by calling the NRC or by other approved methods of authentication. Only the plant to which the specific threat is made need declare the Notification of Unusual Event.

The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an airliner (airliner is meant to be a large aircraft with the potential for causing significant damage to the plant). The status and size of the plane may be provided by NORAD through the NRC.

Escalation to Alert via HA1 would be appropriate if the threat involves an airliner within 30 minutes of the plant.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HU2

Other conditions existing which in the judgment of the Emergency Coordinator warrant declaration of an Unusual Event.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. Other conditions exist which, in the judgment of the Emergency Coordinator, indicate that events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Basis:

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator to fall under the Unusual Event emergency class.

From a broad perspective, one area that may warrant Emergency Coordinator judgment is related to likely or actual breakdown of site-specific event mitigating actions. Examples to consider include inadequate emergency response procedures, transient response either unexpected or not understood, failure or unavailability of emergency systems during an accident in excess of that assumed in accident analysis, or insufficient availability of equipment and/or support personnel.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HU4

FIRE within PROTECTED AREA boundary not extinguished within 15 minutes of detection.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. FIRE in or contiguous to Condensate Polisher Building, Containment, Fuel Handling Building, Reactor Auxiliary Building, Cooling Tower Areas or Turbine Building not extinguished within 15 minutes of Control Room notification or verification of a Control Room alarm.

Basis:

The purpose of this IC is to address the magnitude and extent of FIREs that may be potentially significant precursors to damage to safety systems. As used here, *Detection is* visual observation and report by plant personnel or sensor alarm indication. The 15-minute time period begins with a credible notification that a FIRE is occurring, or indication of a VALID fire detection system alarm. Verification of a fire detection system alarm includes actions that can be taken within the Control Room to ensure that the alarm is not spurious. A verified alarm is assumed to be an indication of a FIRE unless it is disproved within the 15-minute period by personnel dispatched to the scene. In other words, a personnel report from the scene may be used to disprove a sensor alarm if received within 15 minutes of the alarm, but shall not be required to verify the alarm.

The intent of this 15-minute duration is to size the FIRE and to discriminate against small FIREs that are readily extinguished (e.g., smoldering waste paper basket). The buildings listed are limited and ONLY include buildings and areas contiguous (in actual contact with or immediately adjacent) to plant VITAL AREAs or other significant buildings or areas. The intent of this EAL is not to include buildings (i.e., MSB, Service Building, Construction Support Building, Chiller Building, etc.) or areas that are not contiguous to plant VITAL AREAs. This IC excludes FIREs within administration buildings, waste-basket FIREs, and other small FIREs of no safety consequence.

Escalation to a higher emergency class is by IC HA4, "FIRE or EXPLOSION affecting the operability of plant safety systems required to establish or maintain safe shutdown."

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HU5

Release of toxic or flammable gases deemed detrimental to normal operation of the plant.

Operating Mode Applicability: **All**

Emergency Action Level(s): (1 or 2)

1. Report or detection of toxic or flammable gases that has or could enter the Exclusion Area Boundary in amounts that can affect NORMAL PLANT OPERATIONS.

OR

2. Report by St. Charles Parish for evacuation or sheltering of site personnel based on an offsite event.

Basis:

This IC is based on the existence of uncontrolled releases of toxic or flammable gas that may enter the EAB and affect normal plant operations. It is intended that releases of toxic or flammable gases are of sufficient quantity, and the release point of such gases is such that normal plant operations would be affected. This would preclude small or incidental releases, or releases that do not impact structures needed for plant operation. The EALs are intended to not require significant assessment or quantification. The EALs assume an uncontrolled process that has the potential to affect plant operations or personnel safety. Information from a neighboring plant provided over the Taft Industrial Complex Communication (TICC) radio in the Control Room meets the intent of the term "report" as used in EAL #1 and is considered to be information from a credible source.

Escalation is via HA5, which involves a quantified release of toxic or flammable gas affecting VITAL AREAS.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HU6

Natural and destructive phenomena affecting the PROTECTED AREA

Operating Mode Applicability: **All**

Emergency Action Level(s): (1 or 2 or 3 or 4 or 5 or 6 or 7 or 8)

1. Earthquake felt in plant and detected on station seismic instrumentation.

OR

2. Report by plant personnel of tornado or high winds > 100 mph striking within PROTECTED AREA boundary.

OR

3. Vehicle crash into plant structures or systems within PROTECTED AREA boundary.

OR

4. Report by plant personnel of an unanticipated EXPLOSION within PROTECTED AREA boundary resulting in VISIBLE DAMAGE to permanent structure or equipment.

OR

5. Report of turbine failure resulting in casing penetration or damage to turbine or generator seals.

OR

6. Uncontrolled flooding in Reactor Auxiliary Building or Cooling Tower Areas that has the potential to affect safety related equipment needed for the current operating mode.

OR

7. Hurricane force winds (≥ 74 mph) expected to arrive on site in ≤12 hours as projected by the National Weather Service for a hurricane event

OR

8. River water level at the intake structure > +27 FT MSL.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HU6

Basis:

An Unusual Event in this IC would be declared on the basis of the occurrence of an event of sufficient magnitude to be of concern to plant operators. Areas identified in the EALs define the location of the event based on the potential for damage to equipment contained therein. Escalation of the event to an Alert occurs when the magnitude of the event is sufficient to result in damage to equipment contained in the specified location.

EAL #1 is based on damage that may be caused to some portions of the site, but should not affect ability of safety functions to operate. The method of detection is based on instrumentation, validated by a reliable source, or operator assessment.

As defined in the EPRI sponsored "Guidelines for Nuclear Plant Response to an Earthquake", dated October 1989, a "felt earthquake" is: An earthquake of sufficient intensity such that: (a) the vibratory ground motion is felt at the nuclear plant site and recognized as an earthquake based on a consensus of control room operators on duty at the time, and (b) for plants with operable seismic instrumentation, the seismic switches of the plant are activated.

EAL #2 is based on the assumption that a tornado striking (touching down) or high winds within the PROTECTED AREA may have potentially damaged plant structures containing functions or systems required for safe shutdown of the plant. The high wind value in EAL#2 is based on the FSAR design basis 100 year recurrence interval projected wind velocity of 100 miles per hour. The actual site design basis for Seismic Class one structures is 200 mph. If damage is confirmed visually or by other plant indications, then the event may be escalated to Alert.

EAL #3 is intended to address crashes of vehicle types large enough to cause significant damage to plant structures containing functions and systems required for safe shutdown of the plant. Minor accidents involving smaller vehicles or golf carts where the potential for significant damage to site structures is not a concern or "fender bender" type accidents do **not** warrant declaration under this EAL. If the crash is confirmed to affect a plant VITAL AREA, the event may be escalated to Alert.

For EAL #4 only those EXPLOSIONs of sufficient force to damage permanent structures or equipment within the PROTECTED AREA should be considered. No attempt is made in this EAL to assess the actual magnitude of the damage. The occurrence of the EXPLOSION with reports of evidence of damage is sufficient for declaration. The Emergency Coordinator also needs to consider any security aspects of the EXPLOSION, if applicable.

EAL #5 is based on main turbine rotating component failures of sufficient magnitude to cause observable damage to the turbine casing or to the seals of the turbine generator. Of major concern is the potential for leakage of combustible fluids (lubricating oils) and gases (hydrogen cooling) to the plant environs. Actual FIREs and flammable gas build up are appropriately classified via HU4 and HU5. Generator seal damage observed after generator purge does not meet the intent of this EAL because it did not impact normal operation of the plant. This EAL is consistent with the definition of a NOUE while maintaining the anticipatory nature desired and recognizing the risk to non-safety related equipment. Escalation of the emergency classification is based on potential damage done by missiles generated by the failure or in conjunction with a steam generator tube rupture. The latter event would be classified by the radiological EALs or Fission Product Barrier EALs.

EAL #6 is based on the effect of flooding caused by internal events such as component failures, equipment misalignment, or outage activity mishaps. The areas noted include those areas that contain systems required for safe shutdown of the plant, and that are not designed to be wetted or submerged. Site specific areas containing functions and systems required for safe shutdown of the plant are taken from the Waterford 3 Post-Fire Safe Shutdown Analysis, EC-F00-026 for this EAL. These areas are reflected in FP-001-022, Design Change Fire Protection/Safe Shutdown Review. The Containment Building is not included in the EAL because of the guidance in the NEI 99-01 basis that this EAL applies to areas not designed to be wetted or submerged. Escalation of the emergency classification is based on the damage caused or by access restrictions that prevent necessary plant operations or systems monitoring.

EAL #7 addresses the potential for the site to experience high level (hurricane force) winds and associated flooding and storm surge over an extended period of time (usually several hours). This EAL is selected because it will generally be associated with significant levels of site severe weather response such as a potential precautionary shutdown, diesel testing, staff call-outs, etc. The site experiencing a hurricane can also be a precursor of more serious events. It is not necessary to declare this event based on issuance of a Hurricane Warning for St. Charles Parish alone.

EAL #8 addresses Mississippi River flooding. The levee system is designed to protect people and property from the most severe effects of river flooding. The Waterford 3 UFSAR section 2.4 indicates that a flood less severe than the Probable Maximum Flood (PMF) but more severe than the Project Design Flood (PDF) may pose the greatest threat to the site in the event of a nearby levee failure. The UFSAR refers to Mississippi River water level of +27 ft. MSL as that corresponding level for such an event that includes appropriate conservatism. Therefore, this level of flooding can also be a precursor of more serious events and is used as an EAL here.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA1

Initiating Condition -- ALERT

HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Waterford 3 Security Shift Supervision.

OR

2. A validated notification from NRC of an airliner attack threat within 30 minutes of the site.

Basis:

NOTE: Timely and accurate communication between Security Shift Supervision and the Control Room is crucial for the implementation of effective Security EALs.

These EALs address the contingency for a very rapid progression of events, such as that experienced on September 11, 2001. They are not premised solely on the potential for a radiological release. Rather the issue includes the need for rapid assistance due to the possibility for significant and indeterminate damage from additional air, land or water attack elements.

The fact that the site is under serious attack or is an identified attack target with minimal time available for further preparation or additional assistance to arrive requires a heightened state of readiness and implementation of protective measures that can be effective (such as on-site evacuation, dispersal or sheltering).

EAL #1

This EAL addresses the potential for a very rapid progression of events due to a HOSTILE ACTION. It is not intended to address incidents that are accidental events or acts of civil disobedience, such as small aircraft impact, hunters, or physical disputes between employees within the OWNER CONTROLLED AREA. Those events are adequately addressed by other EALs.

Note that this EAL is applicable for any HOSTILE ACTION occurring, or that has occurred, in the OWNER CONTROLLED AREA. This includes Independent Spent Fuel Storage Installations that may be outside the PROTECTED AREA but still in the OWNER CONTROLLED AREA.

EAL #2

This EAL addresses the immediacy of an expected threat arrival or impact on the site within a relatively short time.

The intent of this EAL is to ensure that notifications for the airliner attack threat are made in a timely manner and that Offsite Response Organzations and plant personnel are at a state of heightened awareness regarding the credible threat. Airliner is meant to be a large aircraft with the potential for causing significant damage to the plant.

This EAL is met when a plant receives information regarding an airliner attack threat from NRC and the airliner is within 30 minutes of the plant. Only the plant to which the specific threat is made need declare the Alert.

The NRC Headquarters Operations Officer (HOO) will communicate to the licensee if the threat involves an airliner (airliner is meant to be a large aircraft with the potential for causing significant damage to the plant). The status and size of the plane may be provided by NORAD through the NRC.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA2

Initiating Condition -- ALERT

Other conditions existing which in the judgment of the Emergency Coordinator/EOF Director warrant declaration of an Alert

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. Other conditions exist which in the judgment of the Emergency Coordinator/EOF Director indicate that events are in process or have occurred which involve actual or likely potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

Basis:

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the Alert emergency class.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA3

Initiating Condition -- ALERT

Control Room evacuation has been initiated

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. Entry into OP-901-502, Evacuation of Control Room & Subsequent Plant Shutdown.

Basis:

With the Control Room evacuated, additional support, monitoring and direction through the Technical Support Center and/or other emergency response facility is necessary. Inability to establish plant control from outside the Control Room will escalate this event to a Site Area Emergency.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA4

Initiating Condition -- ALERT

FIRE or EXPLOSION affecting the operability of plant safety systems required to establish or maintain safe shutdown.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. FIRE or EXPLOSION in the Reactor Auxiliary Building, Containment or Cooling Tower Areas

AND

Affected system parameter indications show degraded performance or plant personnel report VISIBLE DAMAGE to permanent structures or equipment within the specified area.

Basis:

Site specific areas containing functions and systems required for safe shutdown of the plant are taken from the Waterford 3 Post-Fire Safe Shutdown Analysis, EC-F00-026 for this IC. These areas are reflected in FP-001-022, Design Change Fire Protection/Safe Shutdown Review.

This EAL addresses a FIRE / EXPLOSION and not the degradation in performance of affected systems. System degradation is addressed in the System Malfunction (S) EALs. The reference to damage of systems is used to identify the magnitude of the FIRE / EXPLOSION and to discriminate against minor FIREs / EXPLOSIONs. The reference to safety systems is included to discriminate against FIREs/EXPLOSIONs in areas having a low probability of affecting safe operation. The significance here is not that a safety system was degraded but the fact that the FIRE / EXPLOSION was large enough to cause damage to these systems. Thus, the designation of a single train was intentional and is appropriate when the FIRE / EXPLOSION is large enough to affect more than one component.

This situation is not the same as removing equipment for maintenance that is covered by Technical Specifications. Removal of equipment for maintenance is a planned activity controlled in accordance with procedures and, as such, does not constitute a substantial degradation in the level of safety of the plant. A FIRE / EXPLOSION is an UNPLANNED activity and, as such, does constitute a substantial degradation in the level of safety of the plant. In this situation, an Alert classification is warranted.

The inclusion of a "report of VISIBLE DAMAGE" should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage. The occurrence of the EXPLOSION with reports of evidence of damage is sufficient for declaration. The declaration of an Alert and the activation of the Technical Support Center will provide the Emergency Coordinator/EOF Director with the resources needed to perform these damage assessments. The Emergency Coordinator/EOF Director also needs to consider any security aspects of the EXPLOSIONs, if applicable.

Escalation to a higher emergency class, if appropriate, will be based on System Malfunction (S), Fission Product Barrier Degradation (F), Abnormal Radiation Levels / Radiological Effluents (A), or Emergency Coordinator/EOF Director Judgment EALs (H...2).

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA5

Initiating Condition -- ALERT

Release of toxic or flammable gases within or contiguous to VITAL AREA which jeopardizes operation of systems required to maintain safe operations or establish or maintain safe shutdown.

Operating Mode Applicability: **All**

Emergency Action Level(s): (1 or 2)

1. Report or detection of toxic gases within or contiguous to VITAL AREA in concentrations that may result in an atmosphere IMMEDIATELY DANGEROUS TO LIFE AND HEALTH (IDLH).

OR

2. Report or detection of gases in concentration > LOWER FLAMMABILITY LIMIT within or contiguous to VITAL AREA.

Basis:

This IC is based on gases that affect the safe operation of the plant. These EALs apply to buildings and areas contiguous to plant VITAL AREAs or other significant buildings or areas. The intent of these EALs is not to include buildings (e.g., warehouses, MSB, Construction Support Building, etc.) or other areas that are not contiguous or immediately adjacent to plant VITAL AREAs. It is appropriate that increased monitoring be done to ascertain whether consequential damage has occurred.

EAL #1 is met if measurement of toxic gas concentration results in an atmosphere that is IDLH within a VITAL AREA or any area or building contiguous to a VITAL AREA. Exposure to an IDLH atmosphere will result in immediate harm to unprotected personnel, and would preclude access to any such affected areas.

EAL #2 is met when the flammable gas concentration in a VITAL AREA or any building or area contiguous to a VITAL AREA exceeds the LOWER FLAMMABILITY LIMIT. Flammable gasses, such as hydrogen and acetylene, are routinely used to maintain plant systems (hydrogen) or to repair equipment/components (acetylene - used in welding). This EAL addresses concentrations at which gases can ignite/support combustion. An uncontrolled release of flammable gasses within a facility structure has the potential to affect safe operation of the plant by limiting either operator or equipment operations due to the potential for ignition and resulting equipment damage/personnel injury. Once it has been determined that an uncontrolled release is occurring, then sampling must be done to determine if the concentration of the released gas is within this range.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA5

Escalation to a higher emergency class, if appropriate, will be based on System Malfunction (S), Fission Product Barrier Degradation (F), Abnormal Rad Levels / Radioactive Effluent (A), or Emergency Coordinator/EOF Director Judgment EALs (H...2).

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HA6

Initiating Condition -- ALERT

Natural and destructive phenomena affecting the plant VITAL AREA.

Operating Mode Applicability: **All**

Emergency Action Level(s): (1 or 2 or 3 or 4 or 5)

1 RED LIGHT on the seismic monitor panel indicates a VALID Seismic Event > Operating Basis Earthquake (OBE).

OR

2. Tornado or high winds > 100 mph within PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the following plant structures/equipment or Control Room indication of degraded performance of those systems.
   - Containment
   - Reactor Auxiliary Building
   - Turbine Building
   - Cooling Tower Areas

OR

3. Vehicle crash within PROTECTED AREA boundary and resulting in VISIBLE DAMAGE to any of the following plant structures or equipment therein or Control Room indication of degraded performance of those systems.
   - Containment
   - Reactor Auxiliary Building
   - Turbine Building
   - Cooling Tower Areas

OR

4. Turbine failure-generated missiles result in any VISIBLE DAMAGE to or penetration of any of the following plant areas.
   - Containment
   - Reactor Auxiliary Building
   - Cooling Tower Areas

OR

5. Uncontrolled flooding in the Reactor Auxiliary Building or Cooling Tower Areas that results in degraded safety system performance as indicated in the Control Room or that creates industrial safety hazards (e.g., electric shock) that preclude access necessary to operate or monitor safety equipment.

Basis:

These EALs escalate from the NOUE EALs in HU6 in that the occurrence of the event has resulted in VISIBLE DAMAGE to plant structures or areas containing equipment necessary for a safe shutdown, or has caused damage to the safety systems in those structures evidenced by control indications of degraded system response or performance. The occurrence of VISIBLE DAMAGE and/or degraded system response is intended to discriminate against lesser events. The initial "report" should not be interpreted as mandating a lengthy damage assessment prior to classification. No attempt is made in this EAL to assess the actual magnitude of the damage. The significance here is not that a particular system or structure was damaged, but rather, that the event was of sufficient magnitude to cause this degradation. Escalation to higher classifications occurs on the basis of other EALs (e.g., System Malfunction (S)).

EAL #1 is based on seismic events of a magnitude that can result in a plant VITAL AREA being subjected to forces beyond design limits, and thus damage may be assumed to have occurred to plant safety systems. See EPRI-sponsored "Guidelines for Nuclear Plant Response to an Earthquake", dated October 1989, for information on seismic event categories.

EAL #2 is based on the FSAR design basis 100 year recurrence interval projected wind velocity of 100 miles per hour. Wind loads of this magnitude can cause significant damage to site structures, and is well below the actual site design basis for Seismic Class One structures of 200 mph. Wind speed for this EAL is based on a 15-minute average from the 10 meter (low level) meteorological monitoring point.

EAL #3 is intended to address crashes of **vehicle types large enough** to cause **significant damage** to plant structures containing functions and systems required for safe shutdown of the plant. Minor accidents involving smaller vehicles or golf carts where significant damage to site structures is not a concern or "fender bender" type accidents do **not** warrant declaration under this EAL.

EAL #4 is intended to address the threat to safety related equipment imposed by missiles generated by main turbine rotating component failures. The list of areas includes areas containing safety-related equipment, their controls, and their power supplies that a turbine missile could penetrate. This EAL is, therefore, consistent with the definition of an ALERT in that if missiles have damaged or penetrated areas containing safety-related equipment the potential exists for substantial degradation of the level of safety of the plant.

HA6

EAL #5 is intended to address the effect of internal flooding (OR external flooding that is of such magnitude that it affects the Reactor Auxiliary Building or Cooling Tower Areas) that has resulted in degraded performance of systems affected by the flooding, or has created industrial safety hazards (e.g., electrical shock) that preclude necessary access to operate or monitor safety equipment. The inability to operate or monitor safety equipment represents a potential for substantial degradation of the level of safety of the plant. This flooding may have been caused by internal events such as component failures, equipment misalignment, or outage activity mishaps. The areas include those areas that contain systems required for safe shutdown of the plant that are not designed to be wetted or submerged. Site specific areas containing functions and systems required for safe shutdown of the plant are taken from the Waterford 3 Post-Fire Safe Shutdown Analysis, EC-F00-026 for this EAL. These areas are reflected in FP-001-022, Design Change Fire Protection/Safe Shutdown Review. The Containment Building is not included in the EAL because of the guidance in the NEI 99-01 basis that this EAL applies to areas not designed to be wetted or submerged.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HS1

Initiating Condition – SITE AREA EMERGENCY

HOSTILE ACTION within the PROTECTED AREA.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Waterford 3 Security Shift Supervision.

Basis:

This condition represents an escalated threat to plant safety above that contained in the Alert in that a HOSTILE FORCE has progressed from the OWNER CONTROLLED AREA to the PROTECTED AREA.

This Initiating Condition addresses the contingency for a very rapid progression of events, such as that experienced on September 11, 2001. It is not premised solely on the potential for a radiological release. Rather the issue includes the need for rapid assistance due to the possibility for significant and indeterminate damage from additional air, land or water attack elements.

The fact that the site is under serious attack or is an identified attack target with minimal time available for further preparation or additional assistance to arrive requires Offsite Response Organization readiness and preparation for the implementation of protective measures.

This Initiating Condition addresses the potential for a very rapid progression of events due to a HOSTILE ACTION. It is not intended to address incidents that are accidental events or acts of civil disobedience, such as small aircraft impact, hunters, or physical disputes between employees within the PROTECTED AREA. Those events are adequately addressed by other EALs.

Escalation of this emergency classification level, if appropriate, would be based on actual plant status after impact or progression of attack.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HS2

Initiating Condition – SITE AREA EMERGENCY

Other conditions existing which in the judgment of the
Emergency Coordinator/EOF Director warrant declaration of Site Area Emergency.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. Other conditions exist which in the judgment of the Emergency Coordinator/EOF Director indicate that events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the Exclusion Area Boundary.

Basis:

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the emergency class description for Site Area Emergency.

HS3

Initiating Condition – SITE AREA EMERGENCY

Control Room evacuation has been initiated and plant control cannot be established.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. Control Room evacuation has been initiated

AND

Control of the plant cannot be established in accordance with OP-901-502, Evacuation of Control Room & Subsequent Plant Shutdown within 15 minutes

Basis:

The Waterford 3 Post-Fire Safe Shutdown Analysis, EC-F00-026 provides the basis for these EALs.

Expeditious transfer of safety systems has not occurred but fission product barrier damage may not yet be indicated. The intent of this IC is to capture those events where control of the plant cannot be reestablished in a timely manner. The determination of whether or not control is established at the remote shutdown panel is based on Emergency Coordinator/EOF Director judgment. The Emergency Coordinator/EOF Director is expected to make a reasonable, informed judgment within 15 minutes that control of the plant from the remote shutdown panel has been established.

The intent of the EAL is to establish control of important plant equipment and knowledge of important plant parameters in a timely manner. Primary emphasis should be placed on those components and instruments that supply protection for and information about safety functions such as reactivity control (ability to shutdown the reactor and maintain it shutdown), RCS inventory (ability to cool the core), and decay heat removal (ability to maintain a heat sink).

Escalation of this event, if appropriate, would be by Fission Product Barrier Degradation (F), Abnormal Radiation Levels/Radiological Effluents (A), or Emergency Coordinator/EOF Director Judgment (H...2) EALs.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HG1

Initiating Condition – GENERAL EMERGENCY

HOSTILE ACTION resulting in loss of physical control of the facility

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions.

OR

2. A HOSTILE ACTION has caused failure of Spent Fuel Cooling Systems and IMMINENT fuel damage is likely for a freshly off-loaded reactor core in pool.

Basis:

EAL #1:

This EAL encompasses conditions under which a HOSTILE ACTION has resulted in a loss of physical control of VITAL AREAs (containing vital equipment or controls of vital equipment) required to maintain safety functions **and** control of that equipment can **not** be transferred to and operated from another location. These safety functions are reactivity control (ability to shut down the reactor and keep it shutdown) RCS inventory (ability to cool the core), and decay heat removal (ability to maintain a heat sink).

Loss of physical control of the Control Room or LCP-43 (remote shutdown panel) capability alone may not prevent the ability to maintain safety functions per se. Design of the remote shutdown capability, the location of the transfer switches and areas of the plant where physical control has been lost should be taken into account. Primary emphasis should be placed on those components and instruments that supply protection for and information about safety functions.

If control of the plant equipment necessary to maintain safety functions can be transferred to another location, then the above initiating condition is not met.

EAL #2:

This EAL addresses failure of spent fuel cooling systems as a result of HOSTILE ACTION if IMMINENT fuel damage is likely, such as when a freshly off-loaded reactor core is in the spent fuel pool. At Waterford 3, the term "freshly off-loaded reactor core" refers to fuel that has been discharged from the core and stored in the spent fuel pool for a period of LESS THAN one year.

HAZARDS AND OTHER CONDITIONS AFFECTING PLANT SAFETY

HG2

Initiating Condition – GENERAL EMERGENCY

Other conditions existing which in the judgment of the Emergency Coordinator/EOF Director warrant declaration of General Emergency.

Operating Mode Applicability: **All**

Emergency Action Level(s):

1. Other conditions exist which in the judgment of the Emergency Coordinator/EOF Director indicate that events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

Basis:

This EAL is intended to address unanticipated conditions not addressed explicitly elsewhere but that warrant declaration of an emergency because conditions exist which are believed by the Emergency Coordinator/EOF Director to fall under the General Emergency class.

SYSTEM MALFUNCTION

SYSTEM MALFUNCTION

SU1

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

Loss of all offsite power to essential busses > 15 minutes.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Loss of power to all unit auxiliary and startup transformers > 15 minutes.

AND

At least 'A' and 'B' emergency diesel generators supplying power to emergency busses.

Basis:

Prolonged loss of AC power reduces required redundancy and potentially degrades the level of safety of the plant by rendering the plant more vulnerable to a complete Loss of AC power (e.g., Station Blackout). Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

Loss of all offsite power varies depending on the plant mode and source transformers. If the unit is back feeding via the Unit Auxiliary Transformers and offsite power is lost, declaration of an Unusual Event is warranted.

SYSTEM MALFUNCTION

SU6

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

UNPLANNED loss of most or all safety system annunciation or indication in the Control Room > 15 minutes.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

UNPLANNED loss of most or all annunciator cabinets C, D, H, K, M, N, SA, SB annunciators or indicators associated with safety systems > 15 minutes.

Basis:

This IC and its associated EAL are intended to recognize the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment.

Recognition of the availability of computer based indication equipment is considered (e.g., SPDS, plant computer, etc.).

Indicators associated with safety systems are those indicators for reactivity control, core cooling, maintaining reactor coolant system integrity or maintaining containment integrity.

Quantification of "Most" is arbitrary, however, it is estimated that if approximately **75%** of the safety system annunicators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected.

It is not intended that Operations personnel perform a detailed count of the instrumentation lost, but use the value as a judgment threshold for determining the severity of plant conditions.

These EALs also recognize that redundant safety system indication powered from separate uninterruptible power supplies is provided. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions.

SYSTEM MALFUNCTION

SU6

The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This will be addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, then the UNUSUAL EVENT is based on SU11 "Inability to reach required shutdown within Technical Specification time limits."

Fifteen minutes was selected as a threshold to exclude transient or momentary power losses. Due to the limited number of safety systems in operation during cold shutdown, refueling, and defueled modes, no EAL is indicated during these modes of operation.

This UNUSUAL EVENT will be escalated to an Alert if a transient is in progress during the loss of annunciation or indication.

SYSTEM MALFUNCTION

SU7

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

RCS Leakage.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s): (1 or 2)

1. Unidentified or pressure boundary leakage > 10 gpm.

OR

2. Identified leakage > 25 gpm.

Basis:

This IC is included as an Unusual Event because it may be a precursor of more serious conditions and, as a result, is considered to be a potential degradation of the level of safety of the plant. The 10 gpm value for the unidentified and pressure boundary leakage was selected as it is observable with normal Control Room indications. Lesser values must generally be determined through time-consuming surveillance tests (e.g., mass balances). The EAL for identified leakage is set at a higher value due to the lesser significance of identified leakage in comparison to unidentified or pressure boundary leakage. Steam generator tube leakage is identified leakage.

Escalation to the Alert level is via Fission Product Barrier Degradation (F) EALs.

SYSTEM MALFUNCTION

SU8

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

UNPLANNED loss of all onsite or offsite communications capabilities.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s): (1 or 2)

1. Loss of all Table M1 onsite communications equipment affecting the ability to perform routine operations.

OR

2. Loss of all Table M2 offsite communications capability

Table M1 Onsite Communications Equipment
Plant radio system Plant paging system In-plant telephones Sound powered phones

Table M2 Offsite Communications Equipment
All telephone lines (commercial and microwave) Industrial Hot Line ENS Civil Defense Radios Operational Hotline

Basis:

The purpose of this IC and its associated EALs is to recognize a loss of communications capability that either defeats the plant operations staff ability to perform routine tasks necessary for plant operations or the ability to communicate problems with offsite authorities. The loss of offsite communications ability is expected to be significantly more comprehensive than the condition addressed by 10 CFR 50.72.

The availability of one method of ordinary offsite communications is sufficient to inform State and local authorities of plant problems. This EAL is intended to be used only when extraordinary means (e.g., relaying of information from radio transmissions, individuals being sent to offsite locations, etc.) are being utilized to make communications possible.

SYSTEM MALFUNCTION

SU9

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

Fuel clad degradation.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Reactor coolant sample activity value indicating fuel clad degradation > Technical Specification allowable limits.

   - >60 µCi/gm DEI

OR

   - >1.0 µCi/gm DEI for more than 48 hours during one continuous time interval

OR

   - >100/Ē µCi/gm

Basis:

This IC is included because it is a precursor of more serious conditions and, as a result, is considered to be a potential degradation in the level of safety of the plant.

The EAL addresses coolant samples exceeding coolant Technical Specifications for transient iodine spiking limits and coolant samples exceeding coolant Technical Specifications for nominal operating iodine limits for the time period specified in the Technical Specifications.

Escalation of this IC to the Alert level is via the Fission Product Barrier Degradation Monitoring (F) ICs.

SYSTEM MALFUNCTION

SU10

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

Inadvertent criticality.

Operating Mode Applicability: **Hot Standby (Mode 3)**
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. An UNPLANNED sustained positive startup rate observed on nuclear instrumentation.

Basis:

This IC addresses inadvertent criticality events. While the primary concern is criticality events that occur in Cold Shutdown or Refueling modes (NUREG 1449, Shutdown and Low-Power Operation at Commercial Nuclear Power Plants in the United States), the IC is applicable in other modes in which inadvertent criticalities are possible. This IC indicates a potential degradation of the level of safety of the plant, warranting an Unusual Event classification. This IC excludes inadvertent criticalities that occur during planned reactivity changes associated with reactor startups (e.g., criticality earlier than estimated). This IC corresponds to Cold Shutdown/Refueling CU7.

This condition can be identified using the startup rate meter. The term "sustained" is used in order to allow exclusion of expected short term positive startup rates from planned control rod movements (such as shutdown bank withdrawal). These short term positive startup rates are the result of the increase in neutron population due to subcritical multiplication.

Escalation would be by the Fission Product Barrier Matrix (F), as appropriate to the operating mode at the time of the event, or by Emergency Coordinator Judgment.

SYSTEM MALFUNCTION

SU11

Initiating Condition -- NOTIFICATION OF UNUSUAL EVENT

Inability to reach required shutdown within Technical Specification time limits.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Plant is not brought to required operating mode within Technical Specifications LCO Action Statement time

Basis:

Limiting Conditions of Operation (LCOs) require the plant to be brought to a required shutdown mode when the Technical Specification required configuration cannot be restored. Depending on the circumstances, this may or may not be an emergency or precursor to a more severe condition. In any case, the initiation of plant shutdown required by the site Technical Specifications requires a one-hour report under 10 CFR 50.72 (b) Non-emergency events. The plant is within its safety envelope when being shut down within the allowable action statement time in the Technical Specifications. An **immediate** UNUSUAL EVENT is required when the plant is not brought to the required operating mode within the allowable action statement time in the Technical Specifications. Declaration of an Unusual Event is based on the time at which the LCO-specified action statement time period elapses under Technical Specifications and is not related to how long a condition may have existed. Other required Technical Specification shutdowns that involve precursors to more serious events are addressed by other System Malfunction (S), Hazards (H), or Fission Product Barrier Degradation (F) EALs.

SYSTEM MALFUNCTION

SA1

Initiating Condition -- ALERT

AC power capability to essential busses reduced to a single power source > 15 minutes such that any additional single failure would result in station blackout.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. AC power capability to essential busses reduced to a single power source > 15 minutes.

AND

Any additional single failure will result in station blackout.

Basis:

This IC and its associated EAL is intended to provide an escalation from IC SU1. The condition indicated by this IC is the degradation of the offsite and onsite power systems such that any additional single failure would result in a station blackout. This condition could occur due to a loss of all offsite power with a concurrent failure of one emergency diesel generator to supply power to its emergency busses. Another related condition could be the loss of all offsite power **and** loss of the onsite emergency diesel generators with **only** one train of emergency busses being backfed from the unit main generator, **or** the loss of onsite emergency diesels with only one train of emergency busses being backfed from offsite power. The subsequent loss of this single power source would escalate the event to a Site Area Emergency in accordance with SS1, "Loss of All Offsite and Loss of All Onsite AC Power to Essential Busses."

When temporary emergency diesels (TEDs) are used to supplement onsite AC power for essential busses in the event diesels are lost, they are credited in this EAL. The EAL condition does not apply unless the TED also failed.

SYSTEM MALFUNCTION

SA3

Initiating Condition -- ALERT

Failure of Reactor Protection System instrumentation to complete or initiate an automatic reactor trip once a Reactor Protection System setpoint has been exceeded and manual trip was successful.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)

Emergency Action Level(s):

Indication(s) exist that indicate that the Reactor Protection System setpoint was exceeded and automatic trip did not occur and a successful manual trip occurred.

Basis:

This condition indicates failure of the automatic protection system to trip the reactor. This condition is more than a potential degradation of a safety system in that a front line automatic protection system did not function in response to a plant transient and thus the plant safety has been compromised, and design limits of the fuel may have been exceeded. An Alert is indicated because conditions exist that lead to potential loss of fuel clad or RCS. Reactor protection system setpoint being exceeded, rather than limiting safety system setpoint being exceeded, is specified here because failure of the automatic protection system is the issue. A manual trip is any set of actions by the reactor operator(s) at the **reactor control panel** which causes control rods to be rapidly inserted into the core and brings the reactor subcritical (e.g., reactor trip button, DRTS buttons). Failure of manual trip would escalate the event to a Site Area Emergency. Opening the A32 and B32 Bus Feeders to facilitate insertion of all CEAs requires declaration of a Site Area Emergency under SS3. If the RPS, Automatic Reactor trip, fails and a manual reactor trip is initiated, the EAL is satisfied and an Alert must be declared.

SYSTEM MALFUNCTION

SA6

Initiating Condition -- ALERT

UNPLANNED loss of most or all safety system annunciation or indication in the Control Room with either (1) a SIGNIFICANT TRANSIENT in progress, or (2) compensatory non-alarming indicators are unavailable.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. UNPLANNED loss of most or all annunciator cabinets C, D, H, K, M, N, SA, SB annunciators or indicators associated with safety systems > 15 minutes.

AND

Either of the following (a or b):

a. SIGNIFICANT TRANSIENT is in progress.

OR

b. Compensatory non-alarming indications are unavailable.

Basis:

This IC and its associated EAL are intended to recognize the difficulty associated with monitoring changing plant conditions without the use of a major portion of the annunciation or indication equipment during a transient. Recognition of the availability of computer based indication equipment is considered (e.g., SPDS, plant computer, etc.) in this IC.

"Planned" loss of annunciators or indicators includes scheduled maintenance and testing activities.

Quantification of "Most" is arbitrary, however, it is estimated that if approximately **75%** of the safety system annunicators or indicators are lost, there is an increased risk that a degraded plant condition could go undetected.

Indicators associated with safety systems are those indicators for reactivity control, core cooling, maintaining reactor coolant system integrity or maintaining containment integrity.

SYSTEM MALFUNCTION

SA6

It is **not** intended that Operators perform a detailed count of the instrumentation lost but use the value as a judgment threshold for determining the severity of the plant conditions. It is also not intended that the Shift Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation.

It is further recognized that redundant safety system indication powered from separate uninterruptible power supplies is provided. While failure of a large portion of annunciators is more likely than a failure of a large portion of indications, the concern is included in this EAL due to difficulty associated with assessment of plant conditions. The loss of specific, or several, safety system indicators should remain a function of that specific system or component operability status. This is addressed by the specific Technical Specification. The initiation of a Technical Specification imposed plant shutdown related to the instrument loss will be reported via 10 CFR 50.72. If the shutdown is not in compliance with the Technical Specification action, then the UNUSUAL EVENT is based on SU11 "Inability to Reach Required Shutdown Within Technical Specification Limits."

"Compensatory non-alarming indications" in this context includes computer-based information such as SPDS, QSPDS, COLSS, etc. This includes all computer systems available for this use. If **both** a major portion of the annunciation system **and** all computer monitoring are unavailable, then the Alert is required.

This Alert will be escalated to a Site Area Emergency if the operating crew can not monitor a transient in progress.

Due to the limited number of safety systems in operation during cold shutdown, refueling, and defueled modes, no EAL is indicated during these modes of operation.

SYSTEM MALFUNCTION

SS1

Initiating Condition -- SITE AREA EMERGENCY

Loss of all offsite power and loss of all onsite AC power to essential busses.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Loss of power to all unit auxiliary and startup transformers

AND

Failure of the 'A' and 'B' emergency diesel generators to supply power to emergency busses

AND

Failure to restore power to at least one emergency bus within 15 minutes from the time of loss of both offsite and onsite AC power.

Basis:

Loss of all AC power compromises all plant safety systems requiring electric power including Shutdown Cooling, ECCS, Containment Heat Removal and the Ultimate Heat Sink. Prolonged loss of all AC power will cause core uncovering and loss of containment integrity, thus this event can escalate to a General Emergency.

Escalation to General Emergency is via Fission Product Barrier Degradation (F) or SG1, "Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power."

Consideration should be given to operable loads necessary to remove decay heat or provide Reactor Vessel makeup capability when evaluating loss of AC power to essential busses. Even though an essential bus may be energized, if necessary loads (i.e., loads that if lost would inhibit decay heat removal capability or Reactor Vessel makeup capability) are not operable on the energized bus, then the bus should not be considered operable for this IC. If this bus was the only energized bus, then a Site Area Emergency in accordance with SS1 should be declared.

SYSTEM MALFUNCTION

SS1

Loss of all offsite power varies depending on the plant mode and source transformers. If the unit is back feeding via the unit Auxiliary Transformers and offsite power is lost in conjunction with loss of onsite AC power from the emergency diesel generators, then declaration of a Site Area Emergency is warranted.

When temporary emergency diesels (TEDs) are used to supplement onsite AC power for essential busses in the event diesels are lost, they are credited in this EAL. The EAL condition does not apply unless the TED also failed, provided the TED powers necessary loads as described above.

SYSTEM MALFUNCTION

SS3

Initiating Condition -- SITE AREA EMERGENCY

Failure of Reactor Protection System instrumentation to complete or initiate an automatic reactor trip once a Reactor Protection System setpoint has been exceeded and manual trip was NOT successful.

Operating Mode Applicability: **Power Operations (Mode 1)**
Startup (Mode 2)

Emergency Action Level(s):

Indication(s) exist that automatic and manual trip were not successful.

Basis:

Automatic and manual trip are not considered successful if action away from the **reactor control console** was required to trip the reactor. For example, opening the A32 and B32 Bus Feeders to facilitate insertion of all CEAs requires declaration of a Site Area Emergency.

Under these conditions, the reactor is producing more heat than the maximum decay heat load for which the safety systems are designed. A Site Area Emergency is indicated because conditions exist that lead to imminent loss or potential loss of both fuel clad and RCS. Although this may be viewed as redundant to the Fission Product Barrier Degradation (F) EALs, its inclusion is necessary to better assure timely recognition and emergency response. Escalation of this event to a General Emergency would be via Fission Product Barrier Degradation (FG1) or Emergency Coordinator/EOF Director Judgment EALs (HG2).

SYSTEM MALFUNCTION

SS4

Initiating Condition -- SITE AREA EMERGENCY

Loss of all vital DC power.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Loss of all Vital DC power based on bus voltage indications < 108 volts for > 15 minutes.

Basis:

Loss of all DC power compromises ability to monitor and control plant safety functions. Prolonged loss of all DC power will cause core uncovering and loss of containment integrity when there is significant decay heat and sensible heat in the reactor system. The minimum voltage necessary, based on plant design, is 105 volts; however, the lowest battery voltage attained on a loss of off site power at the end of the 4 hour period is 107.4 volts on the 'B' battery bank. 108 volts is used for the EAL indication because the Control Room instrumentation reads in 2 volt increments. Reference calculations ECE91-058, "Battery 3A-S "A Train" Calculation for Station Blackout "and ECE91-059, "Battery 3B-S "B Train" Calculation for Station Blackout."

Escalation to a General Emergency would occur by Abnormal Radiation Levels/Radiological Effluents (AG1), Fission Product Barrier Degradation (FG1), or Emergency Coordinator/EOF Director Judgment (HG2) EALs. Fifteen minutes was selected as a threshold to exclude transient or momentary power losses.

SYSTEM MALFUNCTION

SS5

Initiating Condition -- SITE AREA EMERGENCY

Complete loss of heat removal capability.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Loss of core cooling and heat sink.

Basis:

This EAL addresses complete loss of functions, including ultimate heat sink, required to attain and maintain Hot Shutdown (Mode 4) with the reactor at pressure and temperature. Reactivity control is addressed in other EALs.

Under these conditions, there is an actual major failure of systems intended for protection of the public. Thus, declaration of a Site Area Emergency is warranted. Escalation to General Emergency would be via Abnormal Radiation Levels / Radiological Effluents (AG1), Emergency Coordinator/EOF Director Judgment (HG2), or Fission Product Barrier Degradation (FG1) EALs.

Steam Generator levels and natural circulation may be used as indicators because RCS temperatures in Mode 4 will be high enough to use Steam Generators as a heat sink. The inability to makeup to the RCS will prevent establishing or maintaining Hot Shutdown due to the inability to maintain adequate RCS inventory.

SYSTEM MALFUNCTION

SS6

Initiating Condition -- SITE AREA EMERGENCY

Inability to monitor a SIGNIFICANT TRANSIENT in progress.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. a. Loss of most or all annunciator cabinets C, D, H, K, M, N, SA, SB annunciators associated with safety systems.

AND

b. Compensatory non-alarming indications are unavailable

AND

c. Indications needed to monitor safety functions (reactivity control, core cooling, maintaining reactor coolant system integrity or maintaining containment integrity) are unavailable

AND

d. SIGNIFICANT TRANSIENT in progress

Basis:

This IC and its associated EAL are intended to recognize the inability of the Control Room staff to monitor the plant response to a transient. A Site Area Emergency is considered to exist if the Control Room staff can **not** monitor safety functions needed for protection of the public.

Waterford 3 has defined "most" for the first indicator in the EAL to be a loss of **75%** or more of annunciator cabinets C, D, H, K, M, N, SA, SB annunciators. Loss of these annunciator cabinet annunciators or instrumentation has been identified as having the greatest impact on normal operations and safe shutdown of the plant. It is **not** intended that Operations personnel perform a detailed count of the instrumentation lost, but use the value as a judgment threshold for determining the severity of plant conditions. It is also **not** intended that the Shift Manager be tasked with making a judgment decision as to whether additional personnel are required to provide increased monitoring of system operation.

"Compensatory non-alarming indications" in this context includes computer based information such as SPDS, QSPDS, COLSS, etc. This includes all computer systems available for this use.

Indicators associated with safety systems are those indicators for reactivity control, core cooling, maintaining reactor coolant system integrity or maintaining containment integrity. Indications needed to monitor safety functions necessary for protection of the public must include Control Room indications, computer generated indications and dedicated annunciation capability.

"Planned" and **"UNPLANNED"** actions are **not** differentiated since the loss of instrumentation of this magnitude is of such significance during a transient that the cause of the loss is not an ameliorating factor.

This event is required to be declared **regardless** of the length of time equipment is out of service and whether or not equipment is unavailable due to failure or planned maintenance or testing.

SYSTEM MALFUNCTION

SG1

Initiating Condition -- GENERAL EMERGENCY

Prolonged loss of all offsite power and prolonged loss of all onsite AC power to essential busses.

Operating Mode Applicability:

Power Operations (Mode 1)
Startup (Mode 2)
Hot Standby (Mode 3)
Hot Shutdown (Mode 4)

Emergency Action Level(s):

1. Loss of power to all unit auxiliary and startup transformers.

AND

Failure of both 'A' and 'B' emergency diesel generators to supply power to emergency busses.

AND

Either of the following: (a or b)

a. Restoration of at least one emergency bus within 4 hours is not likely

OR

b. FA1 entry conditions met.

Basis:

Loss of all AC power compromises all plant safety systems requiring electric power including Shutdown Cooling, ECCS, Containment Heat Removal and the Ultimate Heat Sink. Prolonged loss of all AC power will lead to loss of fuel clad, RCS, and containment.

This IC is specified to assure that in the unlikely event of a prolonged station blackout, timely recognition of the seriousness of the event occurs and that declaration of a General Emergency occurs as early as is appropriate, based on a reasonable assessment of the event trajectory. The likelihood of restoring **at least one** emergency bus should be based on a realistic appraisal of the situation since a delay in an upgrade decision based on only a chance of mitigating the event could result in a loss of valuable time in preparing and implementing public protective actions. The 4 hours to restore AC power is based on the site blackout coping analysis performed in conformance with 10 CFR 50.63 and Regulatory Guide 1.155, "Station Blackout."

SYSTEM MALFUNCTION

SG1

Appropriate allowance for offsite emergency response, including evacuation of surrounding areas has been considered. Although this EAL may be viewed as redundant to the Fission Product Barrier Degradation (FG1) EALs, its inclusion is necessary to better assure timely recognition and emergency response.

When temporary emergency diesels (TEDs) are used to supplement onsite AC power for essential busses in the event diesels are lost, they are credited in this EAL.

In addition, under these conditions, fission product barrier monitoring capability may be degraded. Although it may be difficult to predict when power can be restored, it is necessary to give the Emergency Coordinator/EOF Director a reasonable idea of how quickly (s)he may need to declare a General Emergency based on two major considerations:

1. Are there any present indications that core cooling is already degraded to the point that Loss or Potential Loss of Fission Product Barriers is imminent?

2. If there are no present indications of such core cooling degradation, then how likely is it that power can be restored in time to assure that a loss of two barriers with a potential loss of the third barrier can be prevented?

Thus, indication of continuing core cooling degradation must be based on Fission Product Barrier monitoring with particular emphasis on Emergency Coordinator/EOF Director judgment as it relates to imminent Loss or Potential Loss of fission product barriers and degraded ability to monitor fission product barriers using the barrier indicators in section F of the EALs.

SYSTEM MALFUNCTION

SG3

Initiating Condition -- GENERAL EMERGENCY

Failure of the Reactor Protection System to complete an automatic trip and manual trip was NOT successful and there is indication of an extreme challenge to the ability to cool the core.

Operating Mode Applicability: **Power Operations (Mode 1)**
Startup (Mode 2)

Emergency Action Level(s):

1. Indications exist that automatic and manual trip were not successful.

AND

Either of the following: (a or b)

a. Indication(s) exists that core cooling is extremely challenged as indicated by CET temperatures at or approaching 1200° F

OR

b. Indication(s) exists that heat removal is extremely challenged as indicated by inability to maintain at least one steam generator level > 50% wide range.

Basis:

Automatic and manual trip are **not** considered successful if action away from the **reactor control console** was required to trip the reactor. For example, opening the A32 and B32 Bus Feeders to facilitate insertion of all CEAs is **NOT** considered as a successful manual trip under this IC.

Under the conditions of this IC and its associated EALs, the efforts to bring the reactor subcritical have been unsuccessful and, as a result, the reactor is producing more heat than the maximum decay heat load for which the safety systems were designed. Although there are capabilities away from the reactor control console, such as emergency boration, the continuing temperature rise indicates that these capabilities are not effective. This situation could be a precursor for a core melt sequence.

SYSTEM MALFUNCTION

SG3

For Waterford 3, the extreme challenge to the ability to cool the core means that core exit thermocouple temperatures are at or approaching 1200 degrees F. Another consideration is the inability to initially remove heat during the early stages of this sequence. If feedwater flow is insufficient to remove the amount of heat required by design (SG level less than 50% Wide Range) from at least one steam generator, then an extreme challenge should be considered to exist. This level is taken from OP-902-002, Loss of Coolant Accident Recovery Procedure.

In the event either of these challenges exist at a time that the reactor has not been brought below the power associated with the safety system design (typically 3 to 5% power) a core melt sequence exists. In this situation, core degradation can occur rapidly. For this reason, the General Emergency declaration is intended to be anticipatory of the fission product barrier matrix declaration to permit maximum offsite intervention time.

Entergy	NUCLEAR MANAGEMENT MANUAL	COMPANY POLICY NO. PL-108 REV. No. 2 Page 1 of 1

Title: Emergency Management Policy Rev. 2 Effective Date: 9-30-99

Cross Discipline Review	Applicable [ ]	Not Applicable [X]
Quality Related	Applicable [ ]	Not Applicable [X]
10CFR50.59	Applicable [ ]	Not Applicable [X]

Policy Owner: _____
Emergency Preparedness Peer Group Chairman

Approved: _____
Executive Sponsor

Policy Purpose

Any emergency within Entergy Operations, Inc., whether nuclear in nature or otherwise, could have serious consequences for Entergy Corporation. Entergy's nuclear managers and employees will be prepared to handle the operational and administrative aspects of any emergency in a prompt and professional manner to the best advantage of Entergy Corporation and its stockholders. This policy sets forth the requirements for emergency management at Entergy Operations, Inc.

Section I - Emergency Planning

Entergy Operations has a responsibility as a good corporate citizen to manage and control any emergency in a manner that will ensure the safety and health of the public and company employees. As such:

- Each Entergy nuclear site will have an established and approved emergency plan.
- Emergency planning will be coordinated among all Entergy sites to assure the achievement of common goals and objectives.
- Emergency planning will involve local, state, and federal agencies that are required to participate in emergency efforts. Interfaces with these agencies will be established and cultivated by appropriate company personnel.
- Headquarters staff and non-affected nuclear sites will provide all available assistance to the affected site to maximize management, control and mitigation of the emergency.

Section II - Communications

The public, Entergy stockholders, and Entergy employees have a right and a need to know information about any company emergency. Therefore,

- Communications directly to the public, through the news media, or through other channels will be coordinated to assure the release of information is timely and accurate. Preplanning of emergency information flow will facilitate this process.
- Employees will have ready access to information about the event and its impact on the company, and their families will be able to obtain information about the safety of their loved ones.
- Information concerning the emergency will be provided and approved by the affected site.