



Kelvin Henderson
Vice President
Catawba Nuclear Station

CNS-16-016

Duke Energy
CN01VP 14800 Concord Road
York, SC 29745

March 8, 2016

o: 803.701.4251
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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC
Catawba Nuclear Station Units 1 and 2
Docket Nos. 50-413 and 50-414
Emergency Plan Implementing Procedures

Please find enclosed for NRC Staff use the following Emergency Plan Implementing Procedures:

RP/0/A/5000/001	Classification of Emergency	Revision 035
RP/0/A/5000/001	Classification of Emergency	Revision 036

Due to a printing error in Revision 035 on page 1 of 5, Enclosure 4.1, Revision 036 has also been included. These revisions are being submitted in accordance with 10CFR 50.54(q) and do not cause a reduction in the effectiveness of the Emergency Plan Implementing Procedures or the Emergency Plan.

There are no new regulatory commitments in these documents. By copy of this letter, two copies of these documents are being provided to the NRC, Region II.

If there are any questions, please call Tom Arlow at 803-701-4027.

Sincerely,

Kelvin Henderson
Vice President, Catawba Nuclear Station

Attachments

AX45
NRR

U.S. Nuclear Regulatory Commission
March 8, 2016
Page 2

xc (w/attachments):

Catherine Haney, Regional Administrator
U. S. Nuclear Regulatory Commission - Region II
Marquis One Tower
245 Peachtree Center Ave., NE Suite 1200
Atlanta, GA 30303-1257

(w/o attachments):

Jeffrey Whited
NRC Project Manager (CNS)
U.S. Nuclear Regulatory Commission
One White Flint North, Mail Stop 8-B1A
11555 Rockville Pike
Rockville, MD 20852-2738

DUKE ENERGY COMPANY
CATAWBA NUCLEAR STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

VOLUME I

PROCEDURE	TITLE
RP/0/A/5000/001	Classification of Emergency (Rev. 035)
RP/0/A/5000/002	Notification of Unusual Event (Rev. 045)
RP/0/A/5000/003	Alert (Rev. 050)
RP/0/A/5000/004	Site Area Emergency (Rev. 053)
RP/0/A/5000/005	General Emergency (Rev. 054)
RP/0/A/5000/06	Deleted
RP/0/A/5000/006 A	Notifications to States and Counties from the Control Room (Rev. 033)
RP/0/A/5000/006 B	Notifications to States and Counties from the Technical Support Center (Rev. 037)
RP/0/A/5000/006 C	Deleted
RP/0/A/5000/007	Natural Disaster and Earthquake (Rev. 043)
RP/0/A/5000/08	Deleted
RP/0/B/5000/008	Hazardous Materials Spill Response (Rev. 043)
RP/0/A/5000/009	Collision/Explosion (Rev. 012)
RP/0/A/5000/010	Conducting a Site Assembly or Preparing the Site for an Evacuation (Rev. 027)
RP/0/A/5000/11	Deleted
RP/0/B/5000/12	Deleted
RP/0/B/5000/013	NRC Notification Requirements (Rev. 038)
RP/0/B/5000/14	Deleted
RP/0/A/5000/015	Core Damage Assessment (Rev. 007)
RP/0/B/5000/016	Deleted
RP/0/B/5000/17	Deleted

February 17, 2016

DUKE ENERGY COMPANY
CATAWBA NUCLEAR STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

VOLUME I

PROCEDURE	TITLE
RP/0/A/5000/018	Emergency Worker Dose Extension (Rev. 002)
RP/0/B/5000/019	Deleted
RP/0/A/5000/020	Technical Support Center (TSC) Activation Procedure (Rev. 038)
RP/0/A/5000/021	Deleted
RP/0/B/5000/022	Deleted
RP/0/B/5000/023	Deleted
RP/0/A/5000/024	OSC Activation Procedure (Rev. 034)
RP/0/B/5000/025	Recovery and Reentry Procedure (Rev. 003)
RP/0/A/5000/026	Site Response to Security Events (Rev. 017)
RP/0/B/5000/028	Nuclear Communications Emergency Response Plan (Rev. 006)

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CATAWBA NUCLEAR STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

VOLUME II

PROCEDURE	TITLE
HP/0/B/1000/006	Emergency Equipment Functional Check and Inventory (Rev. 060)
HP/0/B/1009/001	Deleted
HP/0/B/1009/003	Radiation Protection Primary to Secondary Leakage Program (Rev. 012)
HP/0/B/1009/004	Environmental Monitoring for Emergency Conditions Within the Ten-Mile Radius of CNS (Rev. 031)
HP/0/B/1009/005	Personnel/Vehicle Monitoring for Emergency Conditions (Rev. 018)
HP/0/B/1009/006	Alternative Method for Determining Dose Rate Within the Reactor Building (Rev. 009)
HP/0/B/1009/007	In-Plant Particulate and Iodine Monitoring Under Accident Conditions (Rev. 020)
HP/0/B/1009/008	Contamination Control of Injured Individuals (Rev. 016)
HP/0/B/1009/009	Deleted
HP/0/B/1009/014	Radiation Protection Actions Following an Uncontrolled Release of Liquid Radioactive Material (Rev. 009)
HP/0/B/1009/016	Deleted
HP/0/B/1009/017	Deleted
HP/1/B/1009/017	Deleted
HP/2/B/1009/017	Deleted
HP/0/B/1009/018	Deleted
HP/0/B/1009/019	Emergency Radio System Operation, Maintenance and Communication (Rev. 010)
HP/0/B/1009/024	Implementing Procedure for Estimating Food Chain Doses Under Post- Accident Conditions (Rev. 002)

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DUKE ENERGY COMPANY
CATAWBA NUCLEAR STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

VOLUME II

PROCEDURE	TITLE
HP/0/B/1009/025	Deleted
HP/0/B/1009/026	Superseded
SH/0/B/2005/001	Superseded
SH/0/B/2005/002	Deleted
SH/0/B/2005/003	Deleted
OP/0/A/6200/021	Deleted
SR/0/B/2000/001	Deleted
SR/0/A/2000/001	Standard Procedure for Corporate Communications Response to the Emergency Operations Facility (Applies to Catawba/McGuire/Oconee) (Rev. 002)
SR/0/B/2000/002	Deleted
SR/0/A/2000/003	Activation of the Emergency Operations Facility (Rev. 008)
SR/0/B/2000/003	Deleted
SR/0/A/2000/004	Notifications to States and Counties from the Emergency Operations Facility for Catawba, McGuire and Oconee (Rev. 006)
SR/0/B/2000/004	Deleted
AP/0/A/5500/046	Hostile Aircraft Activity (Rev. 008)
AD-EP-ALL-0202	Emergency Response Offsite Dose Assessment (Rev. 001)
AD-EP-ALL-0203	Protocol for the Field Monitoring Coordinator During Emergency Conditions (Rev 000)
AD-EP-ALL-0204	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release (Rev 000)
AD-EP-ALL-0301	Activation of the Emergency Response Organization Notification System (ERONS) (Rev. 000)

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DUKE ENERGY COMPANY
CATAWBA NUCLEAR STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

VOLUME II

PROCEDURE

TITLE

AD-EP-ALL-0406

Duke Energy Management Network (DEMNET) (Rev 001)

February 17, 2016

Form 703-1. Procedure Process Record (PPR)

(R10-14)

Duke Energy

(1) ID No. RP/0/A/5000/001

PROCEDURE PROCESS RECORD

Revision No. 035

PREPARATION

- (2) Station Catawba Nuclear Station
- (3) Procedure Title Classification of Emergency
- (4) Prepared By* Mandy B. Hare Mandy B. Hare Date 2/4/14
- (5) Requires NSD 228 Applicability Determination?
☒ Yes (New procedure or revision with major changes) - Attach NSD 228 documentation
☐ No (Revision with minor changes)
- (6) Reviewed By* _____ (QR) (K1) Date _____
 Cross-Disciplinary Review By* _____ (QR) (K1) NA Date _____
 Reactivity Mgmt. Review By* _____ (QR) NA Date _____
 Mgmt. Involvement Review By* _____ (Ops. Mgr.) NA Date _____
- (7) Additional Reviews
 Reviewed By* Tom Arlow Tom Carl Date 2/10/14
 Reviewed By* _____ Date _____
- (8) Approved By* CECIL FLETCHER Date 2/10/14

PERFORMANCE (Compare with control copy every 14 calendar days while work is being performed.)

- (9) Compared with Control Copy* _____ Date _____
 Compared with Control Copy* _____ Date _____
 Compared with Control Copy* _____ Date _____
- (10) Date(s) Performed _____
 Work Order Number (WO#) _____

COMPLETION

- (11) Procedure Completion Verification:
☐ Yes ☐ NA Checklists and/or blanks initialed, signed, dated, or filled in NA, as appropriate?
☐ Yes ☐ NA Required enclosures attached?
☐ Yes ☐ NA Charts, graphs, data sheets, etc. attached, dated, identified, and marked?
☐ Yes ☐ NA Calibrated Test Equipment, if used, checked out/in and referenced to this procedure?
☐ Yes ☐ NA Procedure requirements met?
- Verified By* _____ Date _____
- (12) Procedure Completion Approved* _____ Date _____
- (13) Remarks (Attach additional pages, if necessary)

* Printed Name and Signature

Form 703-1. Procedure Process Record (PPR)

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Mgmt. Involvement Review By* _____ (Ops. Mgr.) NA _____ Date _____
- (7) Additional Reviews
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Reviewed By* _____ Date _____
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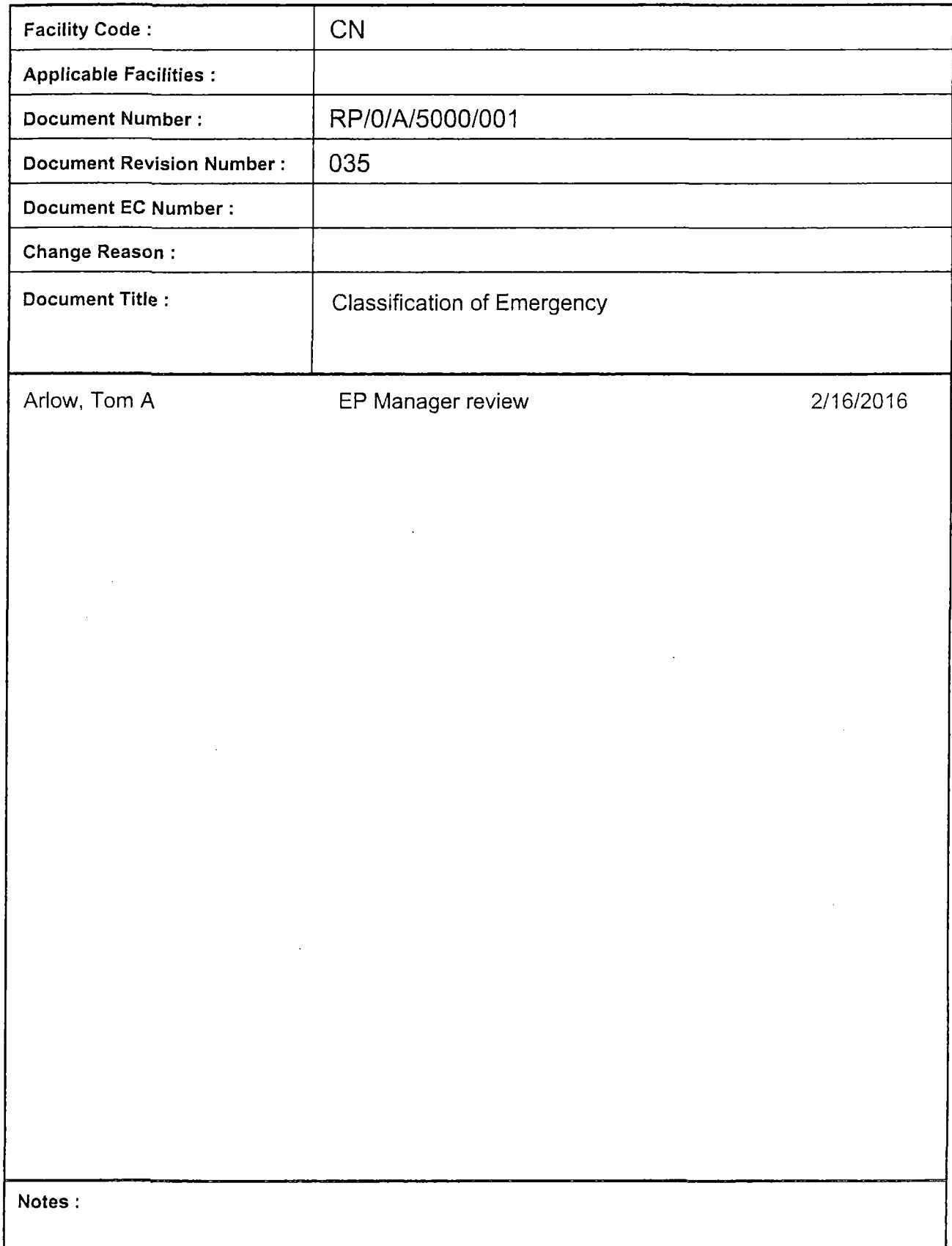
PERFORMANCE (Compare with control copy every 14 calendar days while work is being performed.)

- (9) Compared with Control Copy* _____ Date _____
Compared with Control Copy* _____ Date _____
Compared with Control Copy* _____ Date _____
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☐ Yes ☐ NA Required enclosures attached?
☐ Yes ☐ NA Charts, graphs, data sheets, etc. attached, dated, identified, and marked?
☐ Yes ☐ NA Calibrated Test Equipment, if used, checked out/in and referenced to this procedure?
☐ Yes ☐ NA Procedure requirements met?
- Verified By* _____ Date _____
- (12) Procedure Completion Approved* _____ Date _____
- (13) Remarks (Attach additional pages, if necessary)

* Printed Name and Signature



10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number		Applicable Sites	
EREG #:01997084 PPR AR# 01935311		BNP	<input type="checkbox"/>
		CNS	<input checked="" type="checkbox"/>
		CR3	<input type="checkbox"/>
		HNP	<input type="checkbox"/>
5AD #:01995501		MNS	<input type="checkbox"/>
		ONS	<input type="checkbox"/>
		RNP	<input type="checkbox"/>
		GO	<input type="checkbox"/>
Document and Revision RP/0/A/5000/001 Revision 035		Classification of Emergency	
<p>Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):</p> <p>Activity description RP/0/A/5000/001 (Classification of Emergency) Rev.035</p> <ol style="list-style-type: none"> 1) Procedure Body Section 2 Immediate Actions- Step 2.4 - Changed to read "<u>IF</u> the plant was in Mode 1-4 and a valid condition affects fission product barriers, proceed to Enclosure 4.1 (Fission Product Barrier Matrix) <u>OR</u> refer to EAL wallboards". 2) Procedure Body Section 2 Immediate Actions- Step 2.5 - <u>IF</u> a General Emergency is <u>NOT</u> declared in Step 2.4 <u>OR</u> the condition does <u>NOT</u> affect fission product barriers, review the listing of enclosures <u>OR</u> refer to EAL wallboards to determine if the event is applicable to one the categories shown. 3) Procedure Body Section 3 Subsequent Actions- Step 3.1 - Changed to read "To escalate, de-escalate, or terminate the Emergency, compare plant conditions to the Initiating Conditions of Enclosures 4.1 through 4.7 <u>OR</u> EAL wallboards". 4) Procedure Body Section 3 Subsequent Actions- Step 3.2 - Changed to read - "Refer to Enclosure 4.8 (Definitions/Acronyms) <u>OR</u> 4.9 (Emergency Declaration Guidelines), as needed." <p>References:</p> <p>PRR01935311</p>			

Part II. Activity Previously Reviewed?		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report?		10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.		Continue to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part III	
If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below:					
Justification:					
Bounding document attached (optional)					<input type="checkbox"/>
Part III. Editorial Change		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent?		10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	
Justification:					
Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)					
Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.					
1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)				
1a	Responsibility for emergency response is assigned.				<input type="checkbox"/>
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.				<input type="checkbox"/>
2	10 CFR 50.47(b)(2) Onsite Emergency Organization				
2a	Process ensures that on-shift emergency response responsibilities are staffed and assigned				<input type="checkbox"/>
2b	The process for timely augmentation of on-shift staff is established and maintained.				<input type="checkbox"/>
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources				
3a	Arrangements for requesting and using off site assistance have been made.				<input type="checkbox"/>
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)				<input type="checkbox"/>
4	10 CFR 50.47(b)(4) Emergency Classification System				
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)				<input type="checkbox"/>
5	10 CFR 50.47(b)(5) Notification Methods and Procedures				

5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.	<input type="checkbox"/>
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)	<input type="checkbox"/>
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)	<input type="checkbox"/>
Part IV. Emergency Planning Element and Function Screen (cont.)		
6	10 CFR 50.47(b)(6) Emergency Communications	
6a	Systems are established for prompt communication among principal emergency response organizations.	<input type="checkbox"/>
6b	Systems are established for prompt communication to emergency response personnel.	<input type="checkbox"/>
7	10 CFR 50.47(b)(7) Public Education and Information	
7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	<input type="checkbox"/>
7b	Coordinated dissemination of public information during emergencies is established.	<input type="checkbox"/>
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	<input type="checkbox"/>
8b	Adequate equipment is maintained to support emergency response.	<input type="checkbox"/>
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	<input type="checkbox"/>
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	<input type="checkbox"/>
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	<input type="checkbox"/>
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	<input type="checkbox"/>
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	<input type="checkbox"/>
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	<input type="checkbox"/>
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	<input type="checkbox"/>
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	<input type="checkbox"/>
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	<input type="checkbox"/>
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	<input type="checkbox"/>
14c	Identified weaknesses are corrected.	<input type="checkbox"/>

15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	<input type="checkbox"/>
Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	<input type="checkbox"/>
16b	Planners responsible for emergency plan development and maintenance are properly trained.	<input type="checkbox"/>
PART IV. Conclusion		
<p>If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.</p>		X
<p>If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.</p>		<input type="checkbox"/>
<p>The changes included in this revision include enhancements for allowing the use of wallboards. These changes do not impact any planning standard functions, and therefore do not require 50.54Q evaluation.</p>		

Part V. Signatures:		
Preparer Name (Print): Mandy B. Hare	Preparer Signature: <i>Mandy B. Hare</i>	Date: 2/4/16
Reviewer Name (Print): Tom Arlow	Reviewer Signature: <i>Tom Arlow</i>	Date: 2/18/16
Approver (EP Manager Name (Print): Cecil Fletcher	Approver Signature: <i>Cecil Fletcher</i>	Date: 2/10/16
Approver (CFAM, as required) Name (Print)	Approver Signature:	Date:





Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions
--

Create two EREG General Assignments.	<input type="checkbox"/>
<ul style="list-style-type: none"> One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing. One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect. 	<input type="checkbox"/>

QA RECORD

Duke Energy Company CATAWBA NUCLEAR STATION Classification of Emergency Reference Use	Procedure No. RP/0/A/5000/001
	Revision No. 035

PERFORMANCE	
This Procedure was printed on 2/16/2016 10:54 AM from the electronic library as: (ISSUED) - PDF Format Compare with Control Copy every 14 calendar days while work is being performed. Compared with Control Copy * _____ Date _____ Compared with Control Copy * _____ Date _____ Compared with Control Copy * _____ Date _____ <i>* Printed Name and Signature</i>	
Date(s) Performed	Work Order/Task Number (WO#)
COMPLETION	
<input type="checkbox"/> Yes <input type="checkbox"/> NA Checklists and/or blanks initialed, signed, dated, or filled in NA, as appropriate? <input type="checkbox"/> Yes <input type="checkbox"/> NA Required attachments included? <input type="checkbox"/> Yes <input type="checkbox"/> NA Charts, graphs, data sheets, etc. attached, dated, identified, and marked? <input type="checkbox"/> Yes <input type="checkbox"/> NA Calibrated Test Equipment, if used, checked out/in and referenced to this procedure? <input type="checkbox"/> Yes <input type="checkbox"/> NA Procedure requirements met?	
Verified By <i>* Printed Name and Signature</i>	Date
Procedure Completion Approved <i>* Printed Name and Signature</i>	Date
Remarks (attach additional pages, if necessary)	

IMPORTANT: Do NOT mark on barcodes.		Printed Date: *2/16/16*
Attachment Number: *TBD*		
	Revision No.: *035*	
		
Procedure No.: *RP/0/A/5000/001*		
		

Classification of Emergency

1. Symptoms

1.1. Notification of Unusual Event

- 1.1.1 Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated.
- 1.1.2 No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety occurs

1.2 Alert

- 1.2.1 Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of **HOSTILE ACTION**.
- 1.2.2 Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

1.3 Site Area Emergency

- 1.3.1 Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or **HOSTILE ACTION** that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for protection of the public.
- 1.3.2 Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

1.4 General Emergency

- 1.4.1 Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or **HOSTILE ACTION** that results in an actual loss of physical control of the facility.
- 1.4.2 Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

2. Immediate Actions

- 2.1 IF performing this procedure due to security-related event(s) considered to be a **CREDIBLE THREAT** or **HOSTILE ACTION**, perform the following.

- **IF** Security reports that a **SECURITY CONDITION** or **HOSTILE ACTION** is imminent (15 minutes) or in-progress, notify station personnel via the plant page to take the appropriate protective actions. Refer to RP/0/B/5000/026, Site Response to Security Events, as soon as possible for scripted message.
- Perform accelerated notification to the NRC within 15 minutes of the occurrence of the event.

- _____ 2.2 Assessment, classification and declaration of any applicable emergency condition should be completed within 15 minutes after the availability of indications or information to **COGNIZANT FACILITY STAFF** that an EAL threshold has been exceeded. (Refer to Enclosure 4.9, Emergency Declaration Guidelines, as needed)
- _____ 2.3 Determine operating mode that existed at the time the event occurred prior to any protection system or operator action initiated in response of the event.
- _____ 2.4 **IF** the plant was in Mode 1-4 and a valid condition affects fission product barriers, proceed to Enclosure 4.1 (Fission Product Barrier Matrix) **OR** refer to EAL wallboards.
- _____ 2.5 **IF** a General Emergency is **NOT** declared in Step 2.4 **OR** the condition does **NOT** affect fission product barriers, review the listing of enclosures **OR** refer to EAL wallboards to determine if the event is applicable to one the categories shown.
- _____ 2.6 Compare actual plant conditions to the Emergency Action Levels evaluated in step 2.4 and/or 2.5 and declare the appropriate Emergency Class as indicated.
- _____ 2.7 Document the declaration time. _____
- _____ 2.8 Activate the ERO per the appropriate Response Procedure (RP) utilizing the Control Room ERO Notification Job Aid.
- _____ 2.9 **IF** the declaration is made in the Control Room, announce the classification and declaration time to the Control Room Crew at the first opportunity that will not interfere with the performance of the crew or the flow of the Emergency Procedure.
- _____ 2.10 **IF** the declaration is made in the TSC or EOF, announce the classification and declaration time to the applicable facility personnel.

- _____ 2.11 Implement the applicable Emergency Response Procedure (RP) for that classification and continue with subsequent steps of this procedure.

Notification of Unusual Event	RP/0/A/5000/002
Alert	RP/0/A/5000/003
Site Area Emergency	RP/0/A/5000/004
General Emergency	RP/0/A/5000/005

3. Subsequent Actions

- | _____ 3.1 To escalate, de-escalate, or terminate the Emergency, compare plant conditions to the Initiating Conditions of Enclosures 4.1 through 4.7 **OR** EAL wallboards.
- | _____ 3.2 Refer to Enclosure 4.8 (Definitions/Acronyms) **OR** 4.9 (Emergency Declaration Guidelines), as needed.
- _____ 3.3 Refer to Section D of the Catawba Emergency Plan for basis information about the Emergency Classification System as needed.
- _____ 3.4 Refer to RP/0/A/5000/020, "TSC Activation Procedure" concerning the use of 10CFR50.54(x). If the TSC is activated, contact the TSC Emergency Coordinator (EC) for concurrence when using 10CFR50.54(x).

4. Enclosures

- 4.1 Fission Product Barrier Matrix
- 4.2 System Malfunctions
- 4.3 Abnormal Rad Levels/Radiological Effluent
- 4.4 Loss of Shutdown Functions
- 4.5 Loss of Power
- 4.6 Fires/Explosions and Security Events
- 4.7 Natural Disasters, Hazards and Other Conditions Affecting Plant Safety
- 4.8 Definitions/Acronyms
- 4.9 Emergency Declaration Guidelines
- 4.10 Radiation Monitor Reading for Enclosure 4.3 EALs

Enclosure 4.1

Fission Product Barrier Matrix

RP/0/A/5000/001

Page 1 of 5

Fission Product Barrier status (Intact, Potential Loss, or Loss). Add points for all barriers. Classify
 OW.

le events) could occur which results in the conclusion that exceeding the Loss or Potential Loss thresholds is
 hours). In this IMMINENT LOSS situation, use judgment and classify as if the thresholds are exceeded.

Fission Product Barrier status, the Fuel Clad Barrier should be considered to be lost or potentially lost if the conditions
 s or potential loss EALs were met previously **validated and sustained**, even if the conditions do not currently exist.

ion (CSF) indications are not meant to include transient alarm conditions which may appear during the start-up of
 ment. A CSF condition is satisfied when the alarmed state is **valid** and **sustained**. The STA should be consulted to
 alidated prior to the CSF being used as a basis to classify an emergency.

of All AC Power Procedure, is implemented with an appropriate CSF alarm condition **valid** and **sustained**, the CSF
 o classify an emergency prior to any function restoration procedure being implemented within the confines of ECA-

	IC	Alert	IC	Site Area Emergency	IC	General Emergency
	4.1.A.1	Loss OR Potential Loss of Nuclear Coolant System	4.1.S.1	Loss OR Potential Loss of Both Nuclear Coolant System AND Fuel Clad	4.1.G.1	Loss of All Three Barriers
	4.1.A.2	Loss OR Potential Loss of Fuel Clad	4.1.S.2	Loss AND Potential Loss Combinations of Both Nuclear Coolant System AND Fuel Clad	4.1.G.2	Loss of Any Two Barriers AND Potential Loss of the Third
	4.1.A.3	Potential Loss of Containment AND Loss OR Potential Loss	4.1.S.3	Loss of Containment AND Loss OR Potential Loss		

Enclosure 4.1

Fission Product Barrier Matrix

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NOTE: If a barrier is affected, it has a single point value based on a "potential loss" or a "loss." "Not Applicable" is included in the table as a place holder only, and has no point value assigned.

Barrier	Points (1-5)	Potential Loss (X)	Loss (X)	Total Points	Classification
Containment		1	3	1 – 3	Unusual Event
NCS		4	5	4 – 6	Alert
Fuel Clad		4	5	7 – 10	Site Area Emergency
Total Points				11 - 13	General Emergency

1. Compare plant conditions against the Fission Barrier Matrix on pages 3 through 5 of 5.
2. Determine the "potential loss" or "loss" status for each barrier (Containment, NCS and Fuel Clad) based on the EAL symptom description.
3. For each barrier, write the highest single point value applicable for the barrier in the "Points" column and mark the appropriate "loss" column.
4. Add the points in the "Points" column and record the sum as "Total Points".
5. Determine the classification level based on the number of "Total Points".
6. In the table on page 1 of 5, under one of the four "classification" columns, select the event number (e.g. 4.1.A.1 for Loss of Nuclear Coolant System) that best fits the loss of barrier descriptions.
7. Using the number (e.g. 4.1.A.1), select the preprinted notification form OR a blank notification form and complete the required information for Emergency Coordinator approval and transmittal.

Enclosure 4.1
Fission Product Barrier Matrix

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Page 3 of 5

4.1.C CONTAINMENT BARRIER

POTENTIAL LOSS -

(1 Point)

LOSS -

(3 Points)

1. Critical Safety Function Status

- Containment-RED • Not applicable
- Core cooling-RED
Path is indicated
for >15 minutes

2. Containment Conditions

- Containment Pressure > 15 PSIG
- H2 concentration > 9%
- Containment pressure greater than 3 psig with less than one full train of NS and a VX-CARF operating after actuation.
- Rapid unexplained decrease in containment pressure following initial increase
- Containment pressure or sump level response not consistent with LOCA conditions.

NOTE: Refer to Emergency Plan, Sect. D, 4.1.C.2, last paragraph for inability to maintain normal annulus pressure.

CONTINUED

4.1.N NCS BARRIER

POTENTIAL LOSS -

(4 Points)

LOSS -

(5 Points)

1. Critical Safety Function Status

- NCS Integrity-Red • Not applicable
- Heat Sink-Red

2. NCS Leak Rate

- Unisolable leak exceeding the capacity of one charging pump in the normal charging mode with letdown isolated.
- GREATER THAN available makeup capacity as indicated by a loss of NCS subcooling.

CONTINUED

4.1.F FUEL CLAD BARRIER

POTENTIAL LOSS -

(4 Points)

LOSS -

(5 Points)

1. Critical Safety Function Status

- Core Cooling-Orange • Core Cooling-Red
- Heat Sink-Red

2. Primary Coolant Activity Level

- Not applicable
- Coolant Activity GREATER THAN 300 μ Ci/cc Dose Equivalent Iodine (DEI) I-131

CONTINUED

Enclosure 4.1
Fission Product Barrier Matrix

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Page 4 of 5

4.1.C CONTAINMENT BARRIER		4.1.N NCS BARRIER		4.1.F FUEL CLAD BARRIER	
POTENTIAL LOSS - (1 Point)	LOSS - (3 Points)	POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)	POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)
3. <u>Containment Isolation Valves Status After Containment Isolation Actuation</u> <ul style="list-style-type: none"> Not applicable Containment isolation is incomplete and a direct release path from containment exists to the environment 		3. <u>SG Tube Rupture</u> <ul style="list-style-type: none"> Primary-to-Secondary leak rate exceeds the capacity of one charging pump in the normal charging mode with letdown isolated. Indication that a SG is Ruptured and has a Non-Isolable secondary line fault Indication that a SG is ruptured and a prolonged release of contaminated secondary coolant is occurring from the affected SG to the environment 		3. <u>Containment Radiation Monitoring</u> <ul style="list-style-type: none"> Not applicable Containment radiation monitor 53 A or 53 B Reading at time since Shutdown. <ul style="list-style-type: none"> 0-0.5 hrs > 99 R/hr 0.5-2 hrs > 43 R/hr 2-4 hrs > 31 R/hr 4-8 hrs > 22 R/hr >8 hrs > 13 R/hr 	
4. <u>SG Secondary Side Release With Primary-to-Secondary Leakage</u> <ul style="list-style-type: none"> Not applicable Release of secondary side to the environment with primary to secondary leakage GREATER THAN Tech Spec allowable 		4. <u>Containment Radiation Monitoring</u> <ul style="list-style-type: none"> Not applicable Not applicable 		4. <u>Emergency Coordinator/EOF Director Judgement</u> <ul style="list-style-type: none"> Any condition, including inability to monitor the barrier that in the opinion of the Emergency Coordinator/EOF Director indicates LOSS or POTENTIAL LOSS of the fuel clad barrier. <p style="text-align: right;"><u>END</u></p>	
<u>CONTINUED</u>		<u>CONTINUED</u>			

Enclosure 4.1
Fission Product Barrier Matrix

RP/0/A/5000/001
Page 5 of 5

4.1.C CONTAINMENT BARRIER

POTENTIAL LOSS - (1 Point)	LOSS - (3 Points)
-----------------------------------	--------------------------

5. Significant Radioactive Inventory In Containment

- | | |
|--|--|
| <ul style="list-style-type: none"> • Containment Rad. Monitor EMF53A or 53B
Reading at time since shutdown:
0 - 0.5 hr > 390 R/hr
0.5 - 2 hr > 170 R/hr
2 - 4 hr > 125 R/hr
4 - 8 hr > 90 R/hr
> 8 hr > 53 R/hr | <ul style="list-style-type: none"> • Not applicable |
|--|--|

6. Emergency Coordinator /EOF Director Judgment

- Any condition, including inability to monitor the barrier that in the opinion of the Emergency Coordinator/EOF Director indicates **LOSS** or **POTENTIAL LOSS** of the containment barrier.

END

4.1.N NCS BARRIER

POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)
------------------------------------	--------------------------

5. Emergency Coordinator/EOF Director Judgment

- Any condition, including inability to monitor the barrier that in the opinion of the Emergency Coordinator /EOF Director indicates **LOSS** or **POTENTIAL LOSS** of the NCS barrier.

END

4.1.F FUEL CLAD BARRIER

POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)
------------------------------------	--------------------------

Enclosure 4.2
System Malfunctions

RP/0/A/5000/001
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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.2.U.1 Inability to Reach Required Shutdown Within Technical Specification Limits.

OPERATING MODE: 1, 2, 3, 4

4.2.U.1-1 Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.

4.2.U.2 Unplanned Loss of Most or All Safety System Annunciation or Indication in the Control Room for Greater Than 15 Minutes.

OPERATING MODE: 1, 2, 3, 4

4.2.U.2-1 The following conditions exist:

Unplanned loss of most (>50%) annunciators associated with safety systems for greater than 15 minutes.

AND

In the opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director, the loss of the annunciators or indicators requires additional personnel (beyond normal shift compliment) to safely operate the unit.

CONTINUED

4.2.A.1 Unplanned Loss of Most or All Safety System Annunciation or Indication in Control Room With Either (1) a Significant Transient in Progress, or (2) Compensatory Non-Alarming Indicators Unavailable.

OPERATING MODE: 1, 2, 3, 4

4.2.A.1-1 The following conditions exist:

Unplanned loss of most (>50%) annunciators associated with safety systems for greater than 15 minutes.

AND

In the opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director, the loss of the annunciators or indicators requires additional personnel (beyond normal shift compliment) to safely operate the unit.

AND

EITHER of the following:

- **A SIGNIFICANT PLANT TRANSIENT is in progress**
- **Loss of the OAC.**

END

4.2.S.1 Inability to Monitor a Significant Transient in Progress.

OPERATING MODE: 1, 2, 3, 4

4.2.S.1-1 The following conditions exist:

Loss of most (>50%) Annunciators associated with safety systems.

AND

A SIGNIFICANT PLANT TRANSIENT is in progress.

AND

Loss of the OAC.

AND

Inability to provide manual monitoring of any of the following Critical Safety Functions:

- **subcriticality**
- **core cooling**
- **heat sink**
- **containment.**

END

END

Enclosure 4.2
System Malfunctions

RP/0/A/5000/001
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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.2.U.3 Fuel Clad Degradation.

OPERATING MODE: 1, 2, 3, 4, 5

4.2.U.3-1 Dose Equivalent I-131 greater than the Technical Specifications allowable limit.

4.2.U.4 Reactor Coolant System (NCS) Leakage.

OPERATING MODE: 1, 2, 3, 4

4.2.U.4-1 Unidentified leakage \geq 10 gpm.

4.2.U.4-2 Pressure boundary leakage \geq 10 gpm.

4.2.U.4-3 Identified leakage \geq 25 gpm

4.2.U.5 Unplanned Loss of All Onsite or Offsite Communications.

OPERATING MODE: ALL

4.2.U.5-1 Loss of all onsite communications capability (internal phone system, PA system, onsite radio system) affecting the ability to perform routine operations.

4.2.U.5-2 Loss of all offsite communications capability (Duke Emergency Management Network [DEMNET], NRC ETS lines, offsite radio system, commercial phone system) affecting the ability to communicate with offsite authorities.

END

Enclosure 4.3
Abnormal Rad Levels/Radiological Effluent

RP/0/A/5000/001
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<u>UNUSUAL EVENT</u>		<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
4.3.U.1	Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds Two Times the SLC Limits for 60 Minutes or Longer.	4.3.A.1 Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds 200 Times the SLC limits for 15 Minutes or Longer.	4.3.S.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity Exceeds 100 mrem TEDE or 500 mrem CDE Adult Thyroid for the Actual or Projected Duration of the Release.	4.3.G.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity that Exceeds 1000 mrem TEDE or 5000 mrem CDE Adult Thyroid for the Actual or Projected Duration of the Release.
OPERATING MODE: ALL		OPERATING MODE: ALL		
4.3.U.1-1	A valid Trip 2 alarm on radiation monitor EMF-49L or EMF-57 for ≥ 60 minutes or will likely continue for ≥ 60 minutes which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/014.	4.3.A.1-1 A valid indication on radiation monitor EMF- 49L or EMF-57 of $\geq 1.2\text{E}+05$ cpm for ≥ 15 minutes or will likely continue for ≥ 15 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/014.	OPERATING MODE: ALL	OPERATING MODE: ALL
4.3.U.1-2	A valid indication on radiation monitor EMF- 36L of $\geq 3.00\text{E}+04$ cpm for ≥ 60 minutes or will likely continue for ≥ 60 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure AD-EP-ALL-0202.		4.3.S.1-1 A valid indication on radiation monitor EMF-36L of $\geq 2.7\text{E}+06$ cpm sustained for ≥ 15 minutes.	4.3.G.1-1 A valid indication on radiation monitor EMF-36H of $\geq 8.3\text{E}+03$ cpm sustained for ≥ 15 minutes.
			4.3.S.1-2 Dose assessment team calculations indicate dose consequences greater than 100 mrem TEDE or 500 mrem CDE Adult Thyroid at the site boundary.	4.3.G.1-2 Dose assessment team calculations indicate dose consequences greater than 1000 mrem TEDE or 5000 mrem CDE Adult Thyroid at the site boundary.

(Continued)

(Continued)

(Continued)

(Continued)

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
<p>4.3.U.1-3 Gaseous effluent being released exceeds two times SLC 16.11-6 for \geq 60 minutes as determined by RP procedure.</p> <p>4.3.U.1-4 Liquid effluent being released exceeds two times SLC 16.11-1 for \geq 60 minutes as determined by RP procedure.</p> <p>Note: If the monitor reading is sustained for the time period indicated in the EAL <u>AND</u> the required assessments (procedure calculations) cannot be completed within this time period, declaration must be made based on the valid radiation monitor reading.</p> <p><u>(Continued)</u></p>	<p>4.3.A.1-2 A valid indication on radiation monitor EMF- 36L of \geq $5.4E+05$ cpm for \geq 15 minutes or will likely continue for \geq 15 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure AD-EP-ALL-0202.</p> <p>4.3.A.1-3 Gaseous effluent being released exceeds 200 times the level of SLC 16.11-6 for \geq 15 minutes as determined by RP procedure.</p> <p>4.3.A.1-4 Liquid effluent being released exceeds 200 times the level of SLC 16.11-1 for \geq 15 minutes as determined by RP procedure.</p> <p>Note: If the monitor reading is sustained for the time period indicated in the EAL <u>AND</u> the required assessments (procedure calculations) cannot be completed within this time period, declaration must be made based on the valid radiation monitor reading.</p> <p><u>(Continued)</u></p>	<p>4.3.S.1-3 Analysis of field survey results or field survey samples indicates dose consequences greater than 100 mrem TEDE or 500 mrem CDE Adult Thyroid at the site boundary.</p> <p>Note 1: These EMF readings are calculated based on average annual meteorology, site boundary dose rate, and design unit vent flow rate. Calculations by the dose assessment team use actual meteorology, release duration, and unit vent flow rate. Therefore, these EMF readings should not be used if dose assessment team calculations are available.</p> <p>Note 2: If dose assessment team calculations cannot be completed in 15 minutes, then valid monitor reading should be used for emergency classification.</p> <p><u>END</u></p>	<p>4.3.G.1-3 Analysis of field survey results or field survey samples indicates dose consequences greater than 1000 mrem TEDE or 5000 mrem CDE Adult Thyroid at the site boundary.</p> <p>Note 1: These EMF readings are calculated based on average annual meteorology, site boundary dose rate, and design unit vent flow rate. Calculations by the dose assessment team use actual meteorology, release duration, and unit vent flow rate. Therefore, these EMF readings should not be used if dose assessment team calculations are available.</p> <p>Note 2: If dose assessment team calculations cannot be completed in 15 minutes, then valid monitor reading should be used for emergency classification.</p> <p><u>END</u></p>

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.3.U.2 Unexpected Increase in Plant Radiation or Airborne Concentration.

OPERATING MODE: ALL

4.3.U.2-1 Indication of uncontrolled water level decrease of greater than 6 inches in the reactor refueling cavity with all irradiated fuel assemblies remaining covered by water.

4.3.U.2-2 Uncontrolled water level decrease of greater than 6 inches in the spent fuel pool and fuel transfer canal with all irradiated fuel assemblies remaining covered by water.

4.3.U.2-3 Unplanned valid area EMF reading increases by a factor of 1,000 over normal levels as shown in Enclosure 4.10.

END

4.3.A.2 Major Damage to Irradiated Fuel or Loss of Water Level that Has or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel.

Does not apply to spent fuel in dry cask storage. Refer to EPLAN Section D basis document

OPERATING MODE: ALL

4.3.A.2-1 An unplanned valid trip II alarm on any of the following radiation monitors:

Spent Fuel Building
Refueling Bridge
1EMF-15
2EMF-4

Spent Fuel Pool Ventilation
1EMF-42
2EMF-42

Reactor Building Refueling
Bridge (applies to Mode 6 and
No Mode Only)
1EMF-17
2EMF-2

Containment Noble Gas
Monitor (Applies to Mode 6 and
No Mode Only)

1EMF-39
2EMF-39

(Continued)

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.3.A.2-2 Plant personnel report that water level drop in reactor refueling cavity, spent fuel pool, or fuel transfer canal has or will exceed makeup capacity such that any irradiated fuel will become uncovered.

4.3.A.2-3 NC system wide range level <95% after initiation of NC system make-up.

AND

Any irradiated fuel assembly not capable of being lowered into spent fuel pool or reactor vessel.

4.3.A.2-4 Spent Fuel Pool or Fuel Transfer Canal level decrease of >2 feet after initiation of makeup.

AND

Any irradiated fuel assembly not capable of being fully lowered into the spent fuel pool racks or transfer canal fuel transfer system basket.

(Continued)

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.3.A.3 Release of Radioactive Material or Increases 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: ALL

4.3.A.3-1 Valid reading on 1EMF-12 greater than 15 mrem/hr in the Control Room.

4.3.A.3-2 Valid indication of radiation levels greater than 15 mrem/hr in the Central Alarm Station (CAS) or Secondary Alarm Station (SAS).

4.3.A.3-3 Valid radiation monitor reading exceeds the levels shown in Enclosure 4.10.

END

Enclosure 4.4

Loss of Shutdown Functions

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

END

4.4.A.1 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: 1, 2, 3

4.4.A.1-1 The following conditions exist:

Valid reactor trip signal received or required and automatic reactor trip was not successful.

AND

Manual reactor trip from the control room is successful and reactor power is less than 5% and decreasing.

(Continued)

4.4.S.1 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: 1

4.4.S.1-1 The following conditions exist:

Valid reactor trip signal received or required and automatic reactor trip was not successful.

AND

Manual reactor trip from the control room was not successful in reducing reactor power to less than 5% and decreasing.

(Continued)

4.4.G.1 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: 1

4.4.G.1-1 The following conditions exist:

Valid reactor trip signal received or required and automatic reactor trip was not successful.

AND

Manual reactor trip from the control room was not successful in reducing reactor power to less than 5% and decreasing.

AND

EITHER of the following conditions exist:

- Core Cooling CSF-RED
- Heat Sink CSF-RED.

END

Enclosure 4.4

Loss of Shutdown Functions

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

4.4.A.2 Inability to Maintain Plant
in Cold Shutdown.

OPERATING MODE: 5, 6

4.4.A.2-1 Total loss of ND and/or RN
and/or KC.

AND

One of the following:

- Inability to maintain
reactor coolant temperature
below 200°F
- Uncontrolled reactor
coolant temperature rise to
>180°F.

END

SITE AREA EMERGENCY

4.4.S.2 Complete Loss of Function
Needed to Achieve or
Maintain Hot Shutdown.

OPERATING MODE: 1, 2, 3, 4

4.4.S.2-1 Subcriticality CSF-RED.

4.4.S.2-2 Heat Sink CSF-RED.

4.4.S.3 Loss of Water Level in the
Reactor Vessel That Has or
Will Uncover Fuel in the
Reactor Vessel.

OPERATING MODE: 5, 6

4.4.S.3-1 Failure of heat sink causes loss
of cold shutdown conditions.

AND

Lower range Reactor Vessel
Level Indication System
(RVLIS) decreasing after
initiation of NC system
makeup.

4.4.S.3-2 Failure of heat sink causes loss
of cold shutdown conditions.

AND

Reactor Coolant (NC) system
mid or wide range level less
than 11% and decreasing after
initiation of NC system
makeup.

(Continued)

GENERAL EMERGENCY

Enclosure 4.4
Loss of Shutdown Functions

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.4.S.3-3 Failure of heat sink causes loss
of cold shutdown conditions.

AND

Either train ultrasonic level
indication less than 7.25% and
decreasing after initiation of
NC system makeup.

END

Enclosure 4.5

Loss of Power

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.5.U.1 Loss of All Offsite Power to Essential Busses for Greater Than 15 Minutes.

OPERATING MODE: 1, 2, 3, 4

4.5.U.1-1 The following conditions exist:

Loss of offsite power to essential buses ETA and ETB for greater than 15 minutes.

AND

Both emergency diesel generators are supplying power to their respective essential busses.

(Continued)

4.5.A.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown Or Refueling Mode.

OPERATING MODE: 5, 6, No Mode

4.5.A.1-1 Loss of all offsite and onsite AC power as indicated by:

Loss of power on essential buses ETA and ETB.

AND

Failure to restore power to at least one essential bus within 15 minutes.

(Continued)

4.5.S.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.

OPERATING MODE: 1, 2, 3, 4

4.5.S.1-1 Loss of all offsite and onsite AC power as indicated by:

Loss of power on essential buses ETA and ETB.

AND

Failure to restore power to at least one essential bus within 15 minutes.

(Continued)

4.5.G.1 Prolonged Loss of All (Offsite and Onsite) AC Power.

OPERATING MODE: 1, 2, 3, 4

4.5.G.1-1 Prolonged loss of all offsite and onsite AC power as indicated by:

Loss of power on essential buses ETA and ETB for greater than 15 minutes.

AND

Standby Shutdown Facility (SSF) fails to supply NC pump seal injection OR CA supply to Steam Generators.

AND

(Continued)

Enclosure 4.5

Loss of Power

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

OPERATING MODE: 5, 6, No Mode

4.5.U.1-2 The following conditions exist:

Loss of offsite power to essential buses ETA and ETB for greater than 15 minutes.

AND

One emergency diesel generator is supplying power to its respective essential bus.

4.5.U.2 **Unplanned Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater than 15 Minutes.**

OPERATING MODE: 5, 6

4.5.U.2-1 The following conditions exist:

Unplanned loss of both unit related busses: EBA and EBD both <112 VDC, and EBB and EBC both <109 VDC.

AND

Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.

END

4.5.A.2 AC power to essential busses reduced to a single power source for greater than 15 minutes such that an additional single failure could result in station blackout.

OPERATING MODE: 1, 2, 3, 4

4.5.A.2-1 The following condition exists:

AC power capability has been degraded to one essential bus powered from a single power source for > 15 min. due to the loss of all but one of:

SATA SATB
ATC ATD
D/G A D/G B

END

4.5.S.2 Loss of All Vital DC Power.

OPERATING MODE: 1, 2, 3, 4

4.5.S.2-1 The following conditions exist:

Unplanned loss of both unit related busses: EBA and EBD both <112 VDC, and EBB and EBC both <109 VDC.

AND

Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.

END

At least one of the following conditions exist:

- Restoration of at least one essential bus within 4 hours is **NOT** likely
- Indication of continuing degradation of core cooling based on Fission Product Barrier monitoring.

END

Enclosure 4.6

Fire/Explosion and Security Events

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.6.U.1 Fire Within Protected Area Boundary **NOT** Extinguished Within 15 Minutes of Detection **OR** Explosion Within the Protected Area Boundary.

OPERATING MODE: ALL

4.6.U.1-1 Fire in any of the following areas **NOT** extinguished within 15 minutes of control room notification or verification of a control room fire alarm.

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- CAS
- SAS
- Doghouses
- FWST
- Turbine Building
- Service Building
- Monitor Tank Building
- ISFSI
- Unit 1/2 Transformer Yard Areas

(Continued)

4.6.A.1 Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.

OPERATING MODE: 1, 2, 3, 4, 5, 6

4.6.A.1-1 The following conditions exist:
(Non-security events)
Fire or explosion in any of the following areas:

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- CAS
- SAS
- FWST
- Doghouses (Applies in Mode 1, 2, 3, 4 only).

AND

One of the following:

- Affected safety system parameter indications show degraded performance

(Continued)

4.6.S.1 **HOSTILE ACTION** within the **PROTECTED AREA**

OPERATING MODE: ALL

4.6.S.1-1 A **HOSTILE ACTION** is occurring or has occurred within the **PROTECTED AREA** as reported by the CNS Security Shift Supervision

END

4.6.G.1 **HOSTILE ACTION** Resulting in Loss of Physical Control of the Facility.

OPERATING MODE: ALL

4.6.G.1-1 A **HOSTILE ACTION** has occurred such that plant personnel are unable to operate equipment required to maintain safety functions.

4.6.G.1-2 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.

END

Enclosure 4.6

Fire/Explosion and Security Events

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.6.U.1-2 Report by plant personnel of an unanticipated **explosion** within **protected area** boundary resulting in **visible damage** to permanent structure or equipment or a loaded cask in the ISFSI.

4.6.U.2 **Confirmed SECURITY CONDITION or Threat Which Indicates a Potential Degradation in the Level of Safety of the Plant.**

OPERATING MODE: All

4.6.U.2-1 A **SECURITY CONDITION** that does **NOT** involve a **HOSTILE ACTION** as reported by the CNS Security Shift Supervision.

4.6.U.2-2 A credible site-specific security threat notification.

4.6.U.2-3 A validated notification from NRC providing information of an aircraft threat.

END

- Plant personnel report **visible damage** to permanent structures or equipment within the specified area required to establish or maintain safe shutdown within the specifications.

Note: Only one train of a system needs to be affected or damaged in order to satisfy this condition.

4.6.A.2 **Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.**

OPERATING MODE: No Mode

4.6.A.2-1 The following conditions exist:
(Non-security events)
Fire or explosion in any of the following areas:

- Spent Fuel Pool
- Auxiliary Building.
- RN Pump house

AND

One of the following:

- Spent Fuel Pool level and/or temperature show degraded performance

(Continued)

Enclosure 4.6

Fire/Explosion and Security Events

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

- Plant personnel report visible damage to permanent structures or equipment supporting spent fuel pool cooling.

4.6.A.3 HOSTILE ACTION Within the OWNER CONTROLLED AREA or Airborne Attack Threat.

OPERATING MODE: ALL

4.6.A.3-1 A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the CNS Security Shift Supervision

4.6.A.3-2 A validated notification from NRC of airliner attack threat within 30 minutes of the site.

END

Enclosure 4.7

Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

RP/0/A/5000/001

Page 1 of 4

UNUSUAL EVENT

4.7.U.1 Natural and Destructive Phenomena Affecting the Protected Area.

OPERATING MODE: ALL

4.7.U.1-1 Tremor felt and valid alarm on the Syscom Seismic Monitoring System (OAC C1D2252).

4.7.U.1-2 Report by plant personnel of tornado striking within protected area boundary/ISFSI.

4.7.U.1-3 Vehicle crash into plant structures or systems within protected area boundary/ISFSI.

4.7.U.1-4 Report of turbine failure resulting in casing penetration or damage to turbine or generator seals.

4.7.U.1-5 Independent Spent Fuel Cask tipped over or dropped greater than 24 inches.

4.7.U.1-6 Uncontrolled flooding in the ISFSI area.

4.7.U.1-7 Tornado generated missiles(s) impacting the ISFSI.

(Continued)

ALERT

4.7.A.1 Natural and Destructive Phenomena Affecting the Plant Vital Area.

OPERATING MODE: ALL

4.7.A.1-1 Valid "OBE Exceeded" Alarm on 1AD-4,B/8

4.7.A.1-2 Tornado or high winds:
Tornado striking plant structures within the vital area:

- Reactor Building
- Auxiliary Building
- FWST
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- Doghouses
- CAS
- SAS

OR

sustained winds \geq 74 mph for > 15 minutes.

(Continued)

SITE AREA EMERGENCY

4.7.S.1 Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.

OPERATING MODE: ALL

4.7.S.1-1 The following conditions exist:

Control Room evacuation has been initiated per AP/1(2)/A/5500/017

AND

Control of the plant cannot be established from the ASP or the SSF within 15 minutes.

4.7.S.2 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of Site Area Emergency.

OPERATING MODE: ALL

4.7.S.2-1 Other conditions exist which in the Judgement of the Emergency Coordinator/EOF Director indicate actual or likely major failures of plant functions needed for protection of the public.

END

GENERAL EMERGENCY

4.7.G.1 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of General Emergency.

OPERATING MODE: ALL

4.7.G.1-1 Other conditions exist which in the Judgement of the Emergency Coordinator/EOF Director indicate:

(1) actual or imminent substantial core degradation with potential for loss of containment

OR

(2) potential for uncontrolled radionuclide releases. These releases can reasonably be expected to exceed Environmental Protection Agency Protective Action Guideline levels outside the site boundary.

END

Enclosure 4.7

Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.7.U.2 Release of Toxic or
Flammable Gases Deemed
Detrimental to Safe
Operation of the Plant.

OPERATING MODE: ALL

4.7.U.2-1 Report or detection of toxic or
flammable gases that could
enter within the site boundary
in amounts that can affect safe
operation of the plant.

4.7.U.2-2 Report by Local, County or
State Officials for potential
evacuation of site personnel
based on offsite event.

4.7.U.3 Other Conditions Existing
Which in the Judgement of
the Emergency
Coordinator/EOF Director
Warrant Declaration of an
Unusual Event.

OPERATING MODE: ALL

4.7.U.3-1 Other conditions exist which
in the judgement of the
Emergency Coordinator/EOF
Director indicate a potential
degradation of the level of
safety of the plant.

END

4.7.A.1-3 Visible structural damage
caused by either:

- Vehicle crashes

OR

- Turbine failure generated
missiles,

OR

- Other catastrophic events

on any of the following plant
structures:

- Reactor Building
- Auxiliary Building
- FWST
- Diesel Generator Rooms
- Control Room
- RN Pump House
- SSF
- Doghouses
- CAS
- SAS

(Continued)

Enclosure 4.7

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Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.7.A.2 Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown.

OPERATING MODE: ALL

4.7.A.2-1 Report or detection of toxic gases within a Facility Structure in concentrations that will be life threatening to plant personnel.

4.7.A.2-2 Report or detection of flammable gases within a Facility Structure in concentrations that will affect the safe operation of the plant.

Structures for the above EALs:

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- CAS
- SAS

(Continued)

Enclosure 4.7

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Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.7.A.3 Control Room Evacuation
Has Been Initiated.

OPERATING MODE: ALL

4.7.A.3-1 Control Room evacuation has
been initiated per
AP/1(2)/A/5500/017.

4.7.A.4 Other Conditions Existing
Which in the Judgement of
the Emergency
Coordinator/EOF Director
Warrant Declaration of an
Alert.

OPERATING MODE: ALL

4.7.A.4-1 Other conditions exist which
in the Judgement of the
Emergency Coordinator/EOF
Director indicate that plant
safety systems may be
degraded and that increased
monitoring of plant functions
is warranted.

END

Enclosure 4.8
Definitions/Acronyms

RP/0/A/5000/001
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ALERT- Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA protective action guideline exposure levels.

ALL (As relates to Operating Mode Applicability) - Modes 1, 2, 3,4,5,6 and No Mode (Defueled)

BOMB - Refers to an explosive device suspected of having sufficient force to damage plant systems or structures.

CARF - Containment Air Return Fan.

CIVIL DISTURBANCE - A group of ten (10) or more people violently protesting station operations or activities at the site. A civil disturbance is considered to be violent when force has been used in an attempt to injure site personnel or damage plant property.

COGNIZANT FACILITY STAFF - Any member of facility staff, who by virtue of training and experience, is qualified to assess the indications or reports for validity and to compare the same to the EALs in the licensee's emergency classification scheme (Does not include staff whose positions require they report, rather than assess, abnormal conditions to the facility.).

CREDIBLE THREAT - A threat should be considered credible when:

- Physical evidence supporting the threat exists.
- Information independent (law enforcement) from the actual threat message exists that supports the threat.
- A specific group or organization claims responsibility for the threat.

EPA PAG – Environmental Protection Agency Protective Action Guidelines for exposure to a release of radioactive material.

EMERGENCY RELEASE - Any unplanned, quantifiable radiological release to the environment during an emergency event. The release does not have to be related to a declared emergency.

EXPLOSION - A rapid, violent unconfined combustion, or a catastrophic failure of pressurized equipment (e.g., a steamline or feedwater line break) that imparts energy sufficient to potentially damage or creates shrapnel to actually damage permanent structures, systems or components. An electrical breaker flash that creates shrapnel and results in damage to other components beyond scorching should also be considered.

EXTORTION - An attempt to cause an action at the site by threat of force.

FIRE - Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are observed. An electrical breaker flash that creates high temperatures for a short duration and merely localized scorching to that breaker and its compartment should not be considered a fire.

FRESHLY OFF-LOADED REACTOR CORE - The complete removal and relocation of all fuel assemblies from the reactor core and placed in the spent fuel pool. (Typical of a "No Mode" operation during a refuel outage that allows safety system maintenance to occur and results in maximum decay heat load in the spent fuel pool system.)

Definitions/Acronyms

FUNCTIONAL – A component is fully capable of meeting its design function. It would be declared **INOPERABLE** if unable to meet Technical Specifications.

GENERAL EMERGENCY- Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA protective action guideline exposure levels offsite for more than the immediate site area.

HOSTAGE - A person(s) held as leverage against the station to ensure demands will be met by the station.

HOSTILE ACTION - An act toward an NPP 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.

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** time frames are specified, they shall apply.

INOPERABLE – A component does not meet Technical Specifications. The component may be functional, capable of meeting its design.

INABILITY TO DIRECTLY MONITOR - Operational Aid Computer data points are unavailable or gauges/panel indications are not readily available to the operator.

INTRUSION - 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**.

ISFSI - Independent Spent Fuel Storage Installation - Includes the components approved for loading and storage of spent fuel assemblies.

LOSS - A component is **INOPERABLE** and not **FUNCTIONAL**.

NO MODE - Defueled.

OWNER CONTROLLED AREA - Area outside the protected area fence that immediately surrounds the plant. Access to this area is generally restricted to those entering on official business.

PROJECTILE - An object directed toward a NPP that could cause concern for its continued operability, reliability or personnel safety.

PROLONGED - A duration beyond normal limits, defined as "greater than 15 minutes" or as determined by the judgment of the Emergency Coordinator.

Enclosure 4.8

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Definitions/Acronyms

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PROTECTED AREA - Typically, the site specific area which normally encompasses all controlled areas within the security **PROTECTED AREA** fence.

REACTOR COOLANT SYSTEM (RCS/NCS) LEAKAGE - RCS Operational Leakage as defined in the Technical Specification Basis B 3.4.13.

RUPTURED (As relates to Steam Generator) - Existence of primary to secondary leakage of a magnitude sufficient to require or cause a reactor trip and safety injection.

SABOTAGE - Deliberate damage, misalignment, or misoperation of plant equipment with the intent to render the equipment unavailable. 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 PLANT TRANSIENT- 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, (5) Thermal power oscillations >10%.

SITE AREA EMERGENCY - Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or **HOSTILE ACTION** that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to exceed **EPA** Protective Action Guidelines to exposure levels beyond the site boundary.

SITE BOUNDARY - That area, including the protected area, in which Duke Energy has the authority to control all activities, including exclusion or removal of personnel and property.

SLC - Selected Licensee Commitments.

SUSTAINED - A duration of time long enough to confirm that the CSF is valid (not momentary).

TERMINATION - Exiting the emergency condition.

TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE) - The sum of external dose exposure to radioactive plume, to radionuclides deposited on the ground by the plume, and the internal exposure inhaled radionuclides deposited in the body.

TOXIC GAS - A gas that is dangerous to life or health by reason of inhalation or skin contact (e.g. chlorine).

UNCONTROLLED - Event is not the result of planned actions by the plant staff.

UNPLANNED - An event or action is **UNPLANNED** if it is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are **UNPLANNED**.

Definitions/Acronyms

UNUSUAL EVENT- Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

VALID - An indication or report or condition is considered to be **VALID** when it is conclusively verified by: (1) an instrument channel check, or (2) indications on related or redundant instrumentation, or (3) by direct observation by plant personnel such that doubt related to the instrument's operability, the condition's existence or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

VIOLENT - Force has been used in an attempt to injure site personnel or damage plant property.

VISIBLE DAMAGE - Damage to equipment or structure that is readily observable without measurements, testing, or analyses. Damage is sufficient to cause concern regarding the continued operability or reliability of affected structure, system, or component. Example damage: deformation due to heat or impact, denting, penetration, rupture, cracking, paint blistering.

VITAL AREA - Areas within the **PROTECTED AREA** that house equipment important for nuclear safety. Access to a **VITAL AREA** is allowed only if an individual has been authorized to be in that area per the security plan. Therefore, **VITAL AREA** is a security term.

Enclosure 4.9
Emergency Declaration Guidelines

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THE FOLLOWING GUIDANCE IS TO BE USED BY THE EMERGENCY COORDINATOR IN ASSESSING EMERGENCY CONDITIONS.

- Assessment, classification and declaration of any applicable emergency condition should be completed with 15 minutes after indication or information is available to **COGNIZANT FACILITY STAFF** that an EAL threshold has been exceeded.
- The Emergency Coordinator shall review all applicable initiating events to ensure proper classification.
- The BASIS Document (located in Section D of the Catawba Nuclear Site Emergency Plan) is available for review if any questions arise over proper classification.
- Emergencies are declared for the site. If an event results in multiple emergency action levels on a unit or different emergency action levels on each unit, then the emergency declaration shall be based on the higher classification. Information relating to the unit with the lesser classification will be noted as additional information on the Emergency Notification Form (ENF).
- If an event occurs, and a lower or higher plant operating mode is reached before the classification can be made, the classification shall be based on the mode that existed at the time the event occurred.
- The fission product barrier matrix is applicable only to those events that occur at (Mode 1-4) hot shutdown or higher. An event that is recognized at cold shutdown or lower (Mode 5 or 6) shall not be classified using the fission product barrier matrix. Reference would be made to the other enclosures that provide emergency action levels for specific events (e.g. severe weather, fire, security).
- If a transient event should occur, the following guidance is provided.
 1. Some emergency action levels specify that a condition exist for a specific duration prior to declaration.
 - a. For these EALs, the classification is made when the Emergency Coordinator assessment concludes that the specified duration is exceeded or will be exceeded (i.e. condition cannot be reasonably corrected before the duration elapses), whichever is sooner.
 - b. If a plant condition exceeding EAL criteria is corrected before the specified duration time is exceeded, the event is **NOT** classified by that EAL. Lower Severity EALs, if any, shall be reviewed for possible applicability in these cases.

Emergency Declaration Guidelines

2. If a plant condition exceeding EAL criteria is not recognized at the time of occurrence, but is identified well after the condition has occurred (e.g. as a result of routine log or record review) and the condition no longer exists, an emergency shall **NOT** be declared. Reporting under 10CFR50.72 may be required. Such a condition could occur, for example, if a follow-up evaluation of an abnormal condition uncovers evidence that the condition was more severe than earlier believed.
3. If an emergency classification is warranted, but the plant condition is corrected prior to declaration and notification, the Emergency Coordinator must consider the potential that the initiating condition (e.g. Failure of Reactor Protection System or earthquake) may have caused plant damage that warrants augmenting the on-shift personnel via activation of the Emergency Response Organization. The following action shall be taken:
 - a. For UNUSUAL EVENTS, the condition shall be declared and notifications made. The event may be terminated in the same notification or in a follow-up notification.
 - b. For ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY, the event shall be declared and the emergency response organization activated.

DETERMINATION OF "EVENT TIME" (TIME THE 15 MINUTE CLOCK STARTS)

1. Event time is the time at which indications become available that an EAL has been exceeded.
2. Event time is the time the 15 minutes clock starts for classification.
3. The event classification time shall be entered on the emergency notification form.

MOMENTARY ENTRY INTO A HIGHER CLASSIFICATION

If, while in an emergency classification, the specified EALs of a higher classification are met momentarily, and in the judgment of the Emergency Coordinator are not likely to recur, the entry into the higher classification must be acknowledged. Acknowledgment is performed as follows:

If this condition occurs prior to the initial notification to the emergency response organization and off site agencies, the initial message should note that the site is currently in the lower classification, but had momentarily met the criteria for the higher classification. It should also be noted that plant conditions have improved and stabilized to the point that the criteria for the higher classification are not expected to be repeated.

Enclosure 4.10**Radiation Monitor Readings for Enclosure 4.3**

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Note: These values are not intended to apply to anticipated temporary increases due to planned events (e.g. incore detector movement, radwaste container movement, depleted resin transfers, etc.).

Detector	Elevation	Column	Identifier	Unusual Event mR/hr	Alert mR/hr
1EMF-1	522'	FF, 57	Auxiliary Building Corridor	500	5000
1EMF-3	543'	GG, 55	Unit 1 Charging Pump Area	100	5000
1EMF-4	543'	GG, 59	Unit 2 Charging Pump Area	100	5000
1EMF-7	560'	NN, 55	Unit 1 Auxiliary Building Corridor	1500	5000
1EMF-8	560'	NN, 59	Unit 2 Auxiliary Building Corridor	500	5000
1EMF-9	577'	LL, 55	Unit 1 Aux. Building Filter Hatch	100	5000
1EMF-10	577'	LL, 58	Unit 2 Aux. Building Filter Hatch	100	5000
1EMF-22	594'	KK, 53	Containment Purge Filter Area	100	5000
2EMF-9	594'	KK, 61	Containment Purge Filter Area	100	5000

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CATAWBA NUCLEAR STATION
EMERGENCY PLAN IMPLEMENTING PROCEDURES INDEX

VOLUME I

PROCEDURE	TITLE
RP/0/A/5000/001	Classification of Emergency (Rev. 036)
RP/0/A/5000/002	Notification of Unusual Event (Rev. 045)
RP/0/A/5000/003	Alert (Rev. 050)
RP/0/A/5000/004	Site Area Emergency (Rev. 053)
RP/0/A/5000/005	General Emergency (Rev. 054)
RP/0/A/5000/06	Deleted
RP/0/A/5000/006 A	Notifications to States and Counties from the Control Room (Rev. 033)
RP/0/A/5000/006 B	Notifications to States and Counties from the Technical Support Center (Rev. 037)
RP/0/A/5000/006 C	Deleted
RP/0/A/5000/007	Natural Disaster and Earthquake (Rev. 043)
RP/0/A/5000/08	Deleted
RP/0/B/5000/008	Hazardous Materials Spill Response (Rev. 043)
RP/0/A/5000/009	Collision/Explosion (Rev. 012)
RP/0/A/5000/010	Conducting a Site Assembly or Preparing the Site for an Evacuation (Rev. 027)
RP/0/A/5000/11	Deleted
RP/0/B/5000/12	Deleted
RP/0/B/5000/013	NRC Notification Requirements (Rev. 038)
RP/0/B/5000/14	Deleted
RP/0/A/5000/015	Core Damage Assessment (Rev. 007)
RP/0/B/5000/016	Deleted
RP/0/B/5000/17	Deleted

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VOLUME I

PROCEDURE	TITLE
RP/0/A/5000/018	Emergency Worker Dose Extension (Rev. 002)
RP/0/B/5000/019	Deleted
RP/0/A/5000/020	Technical Support Center (TSC) Activation Procedure (Rev. 038)
RP/0/A/5000/021	Deleted
RP/0/B/5000/022	Deleted
RP/0/B/5000/023	Deleted
RP/0/A/5000/024	OSC Activation Procedure (Rev. 034)
RP/0/B/5000/025	Recovery and Reentry Procedure (Rev. 003)
RP/0/A/5000/026	Site Response to Security Events (Rev. 017)
RP/0/B/5000/028	Nuclear Communications Emergency Response Plan (Rev. 006)

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VOLUME II

PROCEDURE	TITLE
HP/0/B/1000/006	Emergency Equipment Functional Check and Inventory (Rev. 060)
HP/0/B/1009/001	Deleted
HP/0/B/1009/003	Radiation Protection Primary to Secondary Leakage Program (Rev. 012)
HP/0/B/1009/004	Environmental Monitoring for Emergency Conditions Within the Ten-Mile Radius of CNS (Rev. 031)
HP/0/B/1009/005	Personnel/Vehicle Monitoring for Emergency Conditions (Rev. 018)
HP/0/B/1009/006	Alternative Method for Determining Dose Rate Within the Reactor Building (Rev. 009)
HP/0/B/1009/007	In-Plant Particulate and Iodine Monitoring Under Accident Conditions (Rev. 020)
HP/0/B/1009/008	Contamination Control of Injured Individuals (Rev. 016)
HP/0/B/1009/009	Deleted
HP/0/B/1009/014	Radiation Protection Actions Following an Uncontrolled Release of Liquid Radioactive Material (Rev. 009)
HP/0/B/1009/016	Deleted
HP/0/B/1009/017	Deleted
HP/1/B/1009/017	Deleted
HP/2/B/1009/017	Deleted
HP/0/B/1009/018	Deleted
HP/0/B/1009/019	Emergency Radio System Operation, Maintenance and Communication (Rev. 010)
HP/0/B/1009/024	Implementing Procedure for Estimating Food Chain Doses Under Post- Accident Conditions (Rev. 002)

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PROCEDURE	TITLE
HP/0/B/1009/025	Deleted
HP/0/B/1009/026	Superseded
SH/0/B/2005/001	Superseded
SH/0/B/2005/002	Deleted
SH/0/B/2005/003	Deleted
OP/0/A/6200/021	Deleted
SR/0/B/2000/001	Deleted
SR/0/A/2000/001	Standard Procedure for Corporate Communications Response to the Emergency Operations Facility (Applies to Catawba/McGuire/Oconee) (Rev. 002)
SR/0/B/2000/002	Deleted
SR/0/A/2000/003	Activation of the Emergency Operations Facility (Rev. 008)
SR/0/B/2000/003	Deleted
SR/0/A/2000/004	Notifications to States and Counties from the Emergency Operations Facility for Catawba, McGuire and Oconee (Rev. 006)
SR/0/B/2000/004	Deleted
AP/0/A/5500/046	Hostile Aircraft Activity (Rev. 008)
AD-EP-ALL-0202	Emergency Response Offsite Dose Assessment (Rev. 001)
AD-EP-ALL-0203	Protocol for the Field Monitoring Coordinator During Emergency Conditions (Rev 000)
AD-EP-ALL-0204	Distribution of Potassium Iodide Tablets in the Event of a Radioiodine Release (Rev 000)
AD-EP-ALL-0301	Activation of the Emergency Response Organization Notification System (ERONS) (Rev. 000)

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VOLUME II

PROCEDURE

TITLE

AD-EP-ALL-0406

Duke Energy Management Network (DEMNET) (Rev 001)

February 18, 2016

Form 703-1. Procedure Process Record (PPR)

(R10-14)

Duke Energy

(1) ID No. RP/0/A/5000/001

PROCEDURE PROCESS RECORD

Revision No. 036

PREPARATION

- (2) Station Catawba Nuclear Station
- (3) Procedure Title Classification of Emergency
- (4) Prepared By* J. Ballenger via phone not 2/16/16 Date 2/16/16
- (5) Requires NSD 228 Applicability Determination?
☒ Yes (New procedure or revision with major changes) - Attach NSD 228 documentation
☐ No (Revision with minor changes)
- (6) Reviewed By* Mandy B. Hare Tracy B. Hare (QR) (KI) Date 2/17/16
 Cross-Disciplinary Review By* _____ (QR) (KI) NA not Date 2/17/16
 Reactivity Mgmt. Review By* _____ (QR) NA not Date 2/17/16
 Mgmt. Involvement Review By* _____ (Ops. Mgr.) NA not Date 2/17/16
- (7) Additional Reviews
 Reviewed By* _____ Date _____
 Reviewed By* _____ Date _____
- (8) Approved By* Tom A. Arlow via phone not 2/17/16 Date 2/17/16

PERFORMANCE (Compare with control copy every 14 calendar days while work is being performed.)

- (9) Compared with Control Copy* _____ Date _____
 Compared with Control Copy* _____ Date _____
 Compared with Control Copy* _____ Date _____
- (10) Date(s) Performed _____
 Work Order Number (WO#) _____

COMPLETION

- (11) Procedure Completion Verification:
☐ Yes ☐ NA Checklists and/or blanks initialed, signed, dated, or filled in NA, as appropriate?
☐ Yes ☐ NA Required enclosures attached?
☐ Yes ☐ NA Charts, graphs, data sheets, etc. attached, dated, identified, and marked?
☐ Yes ☐ NA Calibrated Test Equipment, if used, checked out/in and referenced to this procedure?
☐ Yes ☐ NA Procedure requirements met?
- Verified By* _____ Date _____
- (12) Procedure Completion Approved* _____ Date _____
- (13) Remarks (Attach additional pages, if necessary)

* Printed Name and Signature



Facility Code :	CN
Applicable Facilities :	
Document Number :	RP/0/A/5000/001
Document Revision Number :	036
Document EC Number :	
Change Reason :	
Document Title :	Classification of Emergency
Hare, Mandy B. EP manager designee review 2/17/2016	
Notes :	

10 CFR 50.54(q) Screening Evaluation Form

Screening and Evaluation Number		Applicable Sites			
EREG #:2001696 PPR AR# 2001696		BNP	<input type="checkbox"/>		
		CNS	<input checked="" type="checkbox"/>		
		CR3	<input type="checkbox"/>		
		HNP	<input type="checkbox"/>		
5AD #:02001728		MNS	<input type="checkbox"/>		
		ONS	<input type="checkbox"/>		
		RNP	<input type="checkbox"/>		
		GO	<input type="checkbox"/>		
Document and Revision RP/0/A/5000/001 Revision 036	Classification of Emergency				
<p>Part I. Description of Activity Being Reviewed (event or action, or series of actions that may result in a change to the emergency plan or affect the implementation of the emergency plan):</p> <p><u>Activity Description:</u> RP/0/A/5000/001 (Classification of Emergency) Rev.036</p> <p>1) Enclosure 4.1 - page 1 of 5 - Corrected Fusion PDF error during rendition. No content was changed. There was an error during the rendition to a PDF that caused a portion of the page to be cut off.</p> <p>References: PRR02001696</p>					
<p>Part II. Activity Previously Reviewed?</p> <p>Is this activity Fully bounded by an NRC approved 10 CFR 50.90 submittal or Alert and Notification System Design Report?</p> <p>If yes, identify bounding source document number or approval reference and ensure the basis for concluding the source document fully bounds the proposed change is documented below:</p> <p>Justification:</p>		Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
<p>Bounding document attached (optional)</p>		<p>10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification below and complete Attachment 4, Part V.</p>		<p>Continue to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part III</p>	
		<input type="checkbox"/>			

Part III. Editorial Change		Yes	X	No	<input type="checkbox"/>
Is this activity an editorial or typographical change only, such as formatting, paragraph numbering, spelling, or punctuation that does not change intent?		10 CFR 50.54(q) Effectiveness Evaluation is not required. Enter justification and complete Attachment 4, Part V & VI.		Continue to Attachment 4, Part IV and address non editorial changes	
Justification: Corrected Fusion PDF error during rendition. No content was changed. There was an error during the rendition to a PDF that caused a portion of the page to be cut off. The procedure is required to be revised to correct these issues.					
Part IV. Emergency Planning Element and Function Screen (Reference Attachment 1, Considerations for Addressing Screening Criteria)					
Does this activity involve any of the following, including program elements from NUREG-0654/FEMA REP-1 Section II? If answer is yes, then check box.					
1	10 CFR 50.47(b)(1) Assignment of Responsibility (Organization Control)				
1a	Responsibility for emergency response is assigned.				<input type="checkbox"/>
1b	The response organization has the staff to respond and to augment staff on a continuing basis (24-7 staffing) in accordance with the emergency plan.				<input type="checkbox"/>
2	10 CFR 50.47(b)(2) Onsite Emergency Organization				
2a	Process ensures that on-shift emergency response responsibilities are staffed and assigned				<input type="checkbox"/>
2b	The process for timely augmentation of on-shift staff is established and maintained.				<input type="checkbox"/>
3	10 CFR 50.47(b)(3) Emergency Response Support and Resources				
3a	Arrangements for requesting and using off site assistance have been made.				<input type="checkbox"/>
3b	State and local staff can be accommodated at the EOF in accordance with the emergency plan. (NA for CR3)				<input type="checkbox"/>
4	10 CFR 50.47(b)(4) Emergency Classification System				
4a	A standard scheme of emergency classification and action levels is in use. (Requires final approval of Screen and Evaluation by EP CFAM.)				<input type="checkbox"/>
5	10 CFR 50.47(b)(5) Notification Methods and Procedures				
5a	Procedures for notification of State and local governmental agencies are capable of initiating notification of the declared emergency within 15 minutes (30 minutes for CR3) after declaration of an emergency and providing follow-up notification.				<input type="checkbox"/>
5b	Administrative and physical means have been established for alerting and providing prompt instructions to the public within the plume exposure pathway. (NA for CR3)				<input type="checkbox"/>
5c	The public ANS meets the design requirements of FEMA-REP-10, Guide for Evaluation of Alert and Notification Systems for Nuclear Power Plants, or complies with the licensee's FEMA-approved ANS design report and supporting FEMA approval letter. (NA for CR3)				<input type="checkbox"/>
Part IV. Emergency Planning Element and Function Screen (cont.)					
6	10 CFR 50.47(b)(6) Emergency Communications				
6a	Systems are established for prompt communication among principal emergency response organizations.				<input type="checkbox"/>
6b	Systems are established for prompt communication to emergency response personnel.				<input type="checkbox"/>
7	10 CFR 50.47(b)(7) Public Education and Information				

7a	Emergency preparedness information is made available to the public on a periodic basis within the plume exposure pathway emergency planning zone (EPZ). (NA for CR3)	<input type="checkbox"/>
7b	Coordinated dissemination of public information during emergencies is established.	<input type="checkbox"/>
8	10 CFR 50.47(b)(8) Emergency Facilities and Equipment	
8a	Adequate facilities are maintained to support emergency response.	<input type="checkbox"/>
8b	Adequate equipment is maintained to support emergency response.	<input type="checkbox"/>
9	10 CFR 50.47(b)(9) Accident Assessment	
9a	Methods, systems, and equipment for assessment of radioactive releases are in use.	<input type="checkbox"/>
10	10 CFR 50.47(b)(10) Protective Response	
10a	A range of public PARs is available for implementation during emergencies. (NA for CR3)	<input type="checkbox"/>
10b	Evacuation time estimates for the population located in the plume exposure pathway EPZ are available to support the formulation of PARs and have been provided to State and local governmental authorities. (NA for CR3)	<input type="checkbox"/>
10c	A range of protective actions is available for plant emergency workers during emergencies, including those for hostile action events.	<input type="checkbox"/>
10d	KI is available for implementation as a protective action recommendation in those jurisdictions that chose to provide KI to the public.	<input type="checkbox"/>
11	10 CFR 50.47(b)(11) Radiological Exposure Control	
11a	The resources for controlling radiological exposures for emergency workers are established.	<input type="checkbox"/>
12	10 CFR 50.47(b)(12) Medical and Public Health Support	
12a	Arrangements are made for medical services for contaminated, injured individuals.	<input type="checkbox"/>
13	10 CFR 50.47(b)(13) Recovery Planning and Post-accident Operations	
13a	Plans for recovery and reentry are developed.	<input type="checkbox"/>
14	10 CFR 50.47(b)(14) Drills and Exercises	
14a	A drill and exercise program (including radiological, medical, health physics and other program areas) is established.	<input type="checkbox"/>
14b	Drills, exercises, and training evolutions that provide performance opportunities to develop, maintain, and demonstrate key skills are assessed via a formal critique process in order to identify weaknesses.	<input type="checkbox"/>
14c	Identified weaknesses are corrected.	<input type="checkbox"/>
15	10 CFR 50.47(b)(15) Emergency Response Training	
15a	Training is provided to emergency responders.	<input type="checkbox"/>
Part IV. Emergency Planning Element and Function Screen (cont.)		
16	10 CFR 50.47(b)(16) Emergency Plan Maintenance	
16a	Responsibility for emergency plan development and review is established.	<input type="checkbox"/>
16b	Planners responsible for emergency plan development and maintenance are properly trained.	<input type="checkbox"/>

PART IV. Conclusion

If no Part IV criteria are checked, a 10 CFR 50.54(q) Effectiveness Evaluation is not required, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V. Go to Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part VI for instructions describing the NRC required 30 day submittal.

X

The changes included in this revision include editorial changes only. This revision corrected Fusion PDF error during rendition. No content was changed. There was an error during the rendition to a PDF that caused a portion of the page to be cut off. No planning standards were impacted because there were no content changes to the procedure.

If any Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part IV criteria are checked, then complete Attachment 4, 10 CFR 50.54(q) Screening Evaluation Form, Part V and perform a 10 CFR 50.54(q) Effectiveness Evaluation. Shaded block requires final approval of Screen and Evaluation by EP CFAM.

☐





Part V. Signatures:		
Preparer Name (Print): Tina Kuhr	Preparer Signature:	Date: 2/16/16
Reviewer Name (Print): Mandy Hare	Reviewer Signature: <i>Mandy B. Hare</i>	Date: 2/17/16
Approver (EP Manager Name (Print): Tom Arlow	Approver Signature: <i>Tom Arlow</i> <i>Mandy B. Hare</i> <i>V. A. Hare</i>	Date: 2/17/16
Approver (CFAM, as required) Name (Print)	Approver Signature:	Date:

Part VI. NRC Emergency Plan and Implementing Procedure Submittal Actions
--

Create two EREG General Assignments.	<input type="checkbox"/>
<ul style="list-style-type: none"> One for EP to provide the 10 CFR 50.54(q) summary of the analysis, or the completed 10 CFR 50.54(q), to Licensing. One for Licensing to submit the 10 CFR 50.54(q) information to the NRC within 30 days after the change is put in effect. 	<input type="checkbox"/>

QA RECORD

Duke Energy Company CATAWBA NUCLEAR STATION Classification of Emergency		Procedure No. RP/0/A/5000/001
		Revision No. 036
Reference Use		
PERFORMANCE		
This Procedure was printed on 2/17/2016 3:25 PM from the electronic library as: <div style="text-align: center;">(ISSUED) - PDF Format</div> Compare with Control Copy every 14 calendar days while work is being performed. <div style="display: flex; justify-content: space-between;"> <div>Compared with Control Copy *</div> <div>_____</div> <div>Date _____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Compared with Control Copy *</div> <div>_____</div> <div>Date _____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>Compared with Control Copy *</div> <div>_____</div> <div>Date _____</div> </div> <div style="text-align: left; margin-top: 5px;"> <i>* Printed Name and Signature</i> </div>		
Date(s) Performed	Work Order/Task Number (WO#)	
COMPLETION		
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 30%;"> <input type="checkbox"/> Yes <input type="checkbox"/> NA </div> <div style="width: 70%;"> Checklists and/or blanks initialed, signed, dated, or filled in NA, as appropriate? </div> <div style="width: 30%;"> <input type="checkbox"/> Yes <input type="checkbox"/> NA </div> <div style="width: 70%;"> Required attachments included? </div> <div style="width: 30%;"> <input type="checkbox"/> Yes <input type="checkbox"/> NA </div> <div style="width: 70%;"> Charts, graphs, data sheets, etc. attached, dated, identified, and marked? </div> <div style="width: 30%;"> <input type="checkbox"/> Yes <input type="checkbox"/> NA </div> <div style="width: 70%;"> Calibrated Test Equipment, if used, checked out/in and referenced to this procedure? </div> <div style="width: 30%;"> <input type="checkbox"/> Yes <input type="checkbox"/> NA </div> <div style="width: 70%;"> Procedure requirements met? </div> </div>		
Verified By <i>* Printed Name and Signature</i>		Date
Procedure Completion Approved <i>* Printed Name and Signature</i>		Date
Remarks (<i>attach additional pages, if necessary</i>)		

IMPORTANT: Do <u>NOT</u> mark on barcodes.		Printed Date. *2/17/16*
Attachment Number *TBD*		
	Revision No *036*	
Procedure No. *RP/0/A/5000/001*		
		

Classification of Emergency

1. Symptoms

1.1. Notification of Unusual Event

- 1.1.1 Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated.
- 1.1.2 No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety occurs

1.2 Alert

- 1.2.1 Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of **HOSTILE ACTION**.
- 1.2.2 Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

1.3 Site Area Emergency

- 1.3.1 Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or **HOSTILE ACTION** that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for protection of the public.
- 1.3.2 Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.

1.4 General Emergency

- 1.4.1 Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or **HOSTILE ACTION** that results in an actual loss of physical control of the facility.
- 1.4.2 Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

2. Immediate Actions

- _____ 2.1 **IF** performing this procedure due to security-related event(s) considered to be a **CREDIBLE THREAT** or **HOSTILE ACTION**, perform the following.
- **IF** Security reports that a **SECURITY CONDITION** or **HOSTILE ACTION** is imminent (15 minutes) or in-progress, notify station personnel via the plant page to take the appropriate protective actions. Refer to RP/0/B/5000/026, Site Response to Security Events, as soon as possible for scripted message.
 - Perform accelerated notification to the NRC within 15 minutes of the occurrence of the event.
- _____ 2.2 Assessment, classification and declaration of any applicable emergency condition should be completed within 15 minutes after the availability of indications or information to **COGNIZANT FACILITY STAFF** that an EAL threshold has been exceeded. (Refer to Enclosure 4.9, Emergency Declaration Guidelines, as needed)
- _____ 2.3 Determine operating mode that existed at the time the event occurred prior to any protection system or operator action initiated in response of the event.
- _____ 2.4 **IF** the plant was in Mode 1-4 and a valid condition affects fission product barriers, proceed to Enclosure 4.1 (Fission Product Barrier Matrix) **OR** refer to EAL wallboards.
- _____ 2.5 **IF** a General Emergency is **NOT** declared in Step 2.4 **OR** the condition does **NOT** affect fission product barriers, review the listing of enclosures **OR** refer to EAL wallboards to determine if the event is applicable to one the categories shown.
- _____ 2.6 Compare actual plant conditions to the Emergency Action Levels evaluated in step 2.4 and/or 2.5 and declare the appropriate Emergency Class as indicated.
- _____ 2.7 Document the declaration time. _____
- _____ 2.8 Activate the ERO per the appropriate Response Procedure (RP) utilizing the Control Room ERO Notification Job Aid.
- _____ 2.9 **IF** the declaration is made in the Control Room, announce the classification and declaration time to the Control Room Crew at the first opportunity that will not interfere with the performance of the crew or the flow of the Emergency Procedure.
- _____ 2.10 **IF** the declaration is made in the TSC or EOF, announce the classification and declaration time to the applicable facility personnel.

- _____ 2.11 Implement the applicable Emergency Response Procedure (RP) for that classification and continue with subsequent steps of this procedure.

Notification of Unusual Event	RP/0/A/5000/002
Alert	RP/0/A/5000/003
Site Area Emergency	RP/0/A/5000/004
General Emergency	RP/0/A/5000/005

3. Subsequent Actions

- _____ 3.1 To escalate, de-escalate, or terminate the Emergency, compare plant conditions to the Initiating Conditions of Enclosures 4.1 through 4.7 OR EAL wallboards.
- _____ 3.2 Refer to Enclosure 4.8 (Definitions/Acronyms) OR 4.9 (Emergency Declaration Guidelines), as needed.
- _____ 3.3 Refer to Section D of the Catawba Emergency Plan for basis information about the Emergency Classification System as needed.
- _____ 3.4 Refer to RP/0/A/5000/020, "TSC Activation Procedure" concerning the use of 10CFR50.54(x). If the TSC is activated, contact the TSC Emergency Coordinator (EC) for concurrence when using 10CFR50.54(x).

4. Enclosures

- 4.1 Fission Product Barrier Matrix
- 4.2 System Malfunctions
- 4.3 Abnormal Rad Levels/Radiological Effluent
- 4.4 Loss of Shutdown Functions
- 4.5 Loss of Power
- 4.6 Fires/Explosions and Security Events
- 4.7 Natural Disasters, Hazards and Other Conditions Affecting Plant Safety
- 4.8 Definitions/Acronyms
- 4.9 Emergency Declaration Guidelines
- 4.10 Radiation Monitor Reading for Enclosure 4.3 EALs

Enclosure 4.1

Fission Product Barrier Matrix

RP/0/A/5000/001

Page 1 of 5

1. Use EALs to determine Fission Product Barrier status (Intact, Potential Loss, or Loss). Add points for all barriers. Classify according to the table below.

Note 1: An event (or multiple events) could occur which results in the conclusion that exceeding the Loss or Potential Loss thresholds is IMMINENT (i.e., within 1-3 hours). In this IMMINENT LOSS situation, use judgment and classify as if the thresholds are exceeded.

Note 2: When determining Fission Product Barrier status, the Fuel Clad Barrier should be considered to be lost or potentially lost if the conditions for the Fuel Clad Barrier loss or potential loss EALs were met previously **validated and sustained**, even if the conditions do not currently exist.

Note 3: Critical Safety Function (CSF) indications are not meant to include transient alarm conditions which may appear during the start-up of engineered safeguards equipment. A CSF condition is satisfied when the alarmed state is **valid** and **sustained**. The STA should be consulted to affirm that a CSF has been validated prior to the CSF being used as a basis to classify an emergency.

Example: If ECA-0.0, Loss of All AC Power Procedure, is implemented with an appropriate CSF alarm condition **valid** and **sustained**, the CSF should be used as the basis to classify an emergency prior to any function restoration procedure being implemented within the confines of ECA-0.0.

IC	Unusual Event	IC	Alert	IC	Site Area Emergency	IC	General Emergency
4.1.U.1	Potential Loss of Containment	4.1.A.1	Loss <u>OR</u> Potential Loss of Nuclear Coolant System	4.1.S.1	Loss <u>OR</u> Potential Loss of Both Nuclear Coolant System <u>AND</u> Fuel Clad	4.1.G.1	Loss of All Three Barriers
4.1.U.2	Loss of Containment	4.1.A.2	Loss <u>OR</u> Potential Loss of Fuel Clad	4.1.S.2	Loss <u>AND</u> Potential Loss Combinations of Both Nuclear Coolant System <u>AND</u> Fuel Clad	4.1.G.2	Loss of Any Two Barriers <u>AND</u> Potential Loss of the Third
		4.1.A.3	Potential Loss of Containment <u>AND</u> Loss <u>OR</u> Potential Loss of Any Other Barrier	4.1.S.3	Loss of Containment <u>AND</u> Loss <u>OR</u> Potential Loss of Any Other Barrier		

Enclosure 4.1

Fission Product Barrier Matrix

RP/0/A/5000/001

Page 2 of 5

NOTE: If a barrier is affected, it has a single point value based on a "potential loss" or a "loss." "Not Applicable" is included in the table as a place holder only, and has no point value assigned.

Barrier	Points (1-5)	Potential Loss (X)	Loss (X)	Total Points	Classification
Containment		1	3	1 – 3	Unusual Event
NCS		4	5	4 – 6	Alert
Fuel Clad		4	5	7 – 10	Site Area Emergency
Total Points				11 - 13	General Emergency

1. Compare plant conditions against the Fission Barrier Matrix on pages 3 through 5 of 5.
2. Determine the "potential loss" or "loss" status for each barrier (Containment, NCS and Fuel Clad) based on the EAL symptom description.
3. For each barrier, write the highest single point value applicable for the barrier in the "Points" column and mark the appropriate "loss" column.
4. Add the points in the "Points" column and record the sum as "Total Points".
5. Determine the classification level based on the number of "Total Points".
6. In the table on page 1 of 5, under one of the four "classification" columns, select the event number (e.g. 4.1.A.1 for Loss of Nuclear Coolant System) that best fits the loss of barrier descriptions.
7. Using the number (e.g. 4.1.A.1), select the preprinted notification form OR a blank notification form and complete the required information for Emergency Coordinator approval and transmittal.

Enclosure 4.1
Fission Product Barrier Matrix

RP/0/A/5000/001
Page 3 of 5

4.1.C CONTAINMENT BARRIER		4.1.N NCS BARRIER		4.1.F FUEL CLAD BARRIER	
POTENTIAL LOSS - (1 Point)	LOSS - (3 Points)	POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)	POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)
1. Critical Safety Function Status <ul style="list-style-type: none"> Containment-RED • Not applicable Core cooling-RED Path is indicated for >15 minutes 		1. Critical Safety Function Status <ul style="list-style-type: none"> NCS Integrity-Red • Not applicable Heat Sink-Red 		1. Critical Safety Function Status <ul style="list-style-type: none"> Core Cooling-Orange • Core Cooling-Red Heat Sink-Red 	
2. Containment Conditions <ul style="list-style-type: none"> Containment Pressure > 15 PSIG • Rapid unexplained decrease in containment pressure following initial increase H2 concentration > 9% Containment pressure greater than 3 psig with less than one full train of NS and a VX-CARF operating after actuation. • Containment pressure or sump level response not consistent with LOCA conditions. <p>NOTE: Refer to Emergency Plan, Sect. D. 4.1.C.2, last paragraph for inability to maintain normal annulus pressure.</p>		2. NCS Leak Rate <ul style="list-style-type: none"> Unisolable leak exceeding the capacity of one charging pump in the normal charging mode with letdown isolated. • GREATER THAN available makeup capacity as indicated by a loss of NCS subcooling. 		2. Primary Coolant Activity Level <ul style="list-style-type: none"> Not applicable • Coolant Activity GREATER THAN 300 µCi/cc Dose Equivalent Iodine (DEI) I-131 	
<u>CONTINUED</u>		<u>CONTINUED</u>		<u>CONTINUED</u>	

Enclosure 4.1
Fission Product Barrier Matrix

RP/0/A/5000/001
Page 4 of 5

4.1.C CONTAINMENT BARRIER		4.1.N NCS BARRIER		4.1.F FUEL CLAD BARRIER	
POTENTIAL LOSS - (1 Point)	LOSS - (3 Points)	POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)	POTENTIAL LOSS - (4 Points)	LOSS - (5 Points)
3. <u>Containment Isolation Valves Status After Containment Isolation Actuation</u> <ul style="list-style-type: none"> Not applicable Containment isolation is incomplete and a direct release path from containment exists to the environment 		3. <u>SG Tube Rupture</u> <ul style="list-style-type: none"> Primary-to-Secondary leak rate exceeds the capacity of one charging pump in the normal charging mode with letdown isolated. Indication that a SG is Ruptured and has a Non-Isolable secondary line fault Indication that a SG is ruptured and a prolonged release of contaminated secondary coolant is occurring from the affected SG to the environment 		3. <u>Containment Radiation Monitoring</u> <ul style="list-style-type: none"> Not applicable Containment radiation monitor 53 A or 53 B Reading at time since Shutdown. <ul style="list-style-type: none"> 0-0.5 hrs > 99 R/hr 0.5-2 hrs > 43 R/hr 2-4 hrs > 31 R/hr 4-8 hrs > 22 R/hr >8 hrs > 13 R/hr 	
4. <u>SG Secondary Side Release With Primary-to-Secondary Leakage</u> <ul style="list-style-type: none"> Not applicable Release of secondary side to the environment with primary to secondary leakage GREATER THAN Tech Spec allowable 		4. <u>Containment Radiation Monitoring</u> <ul style="list-style-type: none"> Not applicable Not applicable 		4. <u>Emergency Coordinator/EOF Director Judgement</u> <ul style="list-style-type: none"> Any condition, including inability to monitor the barrier that in the opinion of the Emergency Coordinator/EOF Director indicates LOSS or POTENTIAL LOSS of the fuel clad barrier. 	
<u>CONTINUED</u>		<u>CONTINUED</u>		<u>END</u>	

Enclosure 4.1
Fission Product Barrier Matrix

RP/0/A/5000/001
Page 5 of 5

4.1.C CONTAINMENT BARRIER		4.1.N NCS BARRIER		4.1.F FUEL CLAD BARRIER	
POTENTIAL LOSS -	LOSS -	POTENTIAL LOSS -	LOSS -	POTENTIAL LOSS -	LOSS -
(1 Point)	(3 Points)	(4 Points)	(5 Points)	(4 Points)	(5 Points)
5. <u>Significant Radioactive Inventory In Containment</u> <ul style="list-style-type: none"> Containment Rad. Monitor EMF53A or 53B Reading at time since shutdown: 0 - 0.5 hr > 390 R/hr 0.5 - 2 hr > 170 R/hr 2 - 4 hr > 125 R/hr 4 - 8 hr > 90 R/hr > 8 hr > 53 R/hr Not applicable 		5. <u>Emergency Coordinator/EOF Director Judgement</u> <ul style="list-style-type: none"> Any condition, including inability to monitor the barrier that in the opinion of the Emergency Coordinator /EOF Director indicates LOSS or POTENTIAL LOSS of the NCS barrier. <p style="text-align: center;"><u>END</u></p>			
6. <u>Emergency Coordinator /EOF Director Judgement</u> <ul style="list-style-type: none"> Any condition, including inability to monitor the barrier that in the opinion of the Emergency Coordinator/EOF Director indicates LOSS or POTENTIAL LOSS of the containment barrier. <p style="text-align: center;"><u>END</u></p>					

Enclosure 4.2
System Malfunctions

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<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
<p>4.2.U.1 Inability to Reach Required Shutdown Within Technical Specification Limits.</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>4.2.U.1-1 Plant is not brought to required operating mode within Technical Specifications LCO Action Statement Time.</p> <p>4.2.U.2 Unplanned Loss of Most or All Safety System Annunciation or Indication in the Control Room for Greater Than 15 Minutes.</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>4.2.U.2-1 The following conditions exist:</p> <p>Unplanned loss of most (>50%) annunciators associated with safety systems for greater than 15 minutes.</p> <p style="text-align: center;"><u>AND</u></p> <p>In the opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director, the loss of the annunciators or indicators requires additional personnel (beyond normal shift compliment) to safely operate the unit.</p> <p style="text-align: center;"><u>CONTINUED</u></p>	<p>4.2.A.1 Unplanned Loss of Most or All Safety System Annunciation or Indication in Control Room With Either (1) a Significant Transient in Progress, or (2) Compensatory Non-Alarming Indicators Unavailable.</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>4.2.A.1-1 The following conditions exist:</p> <p>Unplanned loss of most (>50%) annunciators associated with safety systems for greater than 15 minutes.</p> <p style="text-align: center;"><u>AND</u></p> <p>In the opinion of the Operations Shift Manager/Emergency Coordinator/EOF Director, the loss of the annunciators or indicators requires additional personnel (beyond normal shift compliment) to safely operate the unit.</p> <p style="text-align: center;"><u>AND</u></p> <p>EITHER of the following:</p> <ul style="list-style-type: none">• A SIGNIFICANT PLANT TRANSIENT is in progress• Loss of the OAC. <p style="text-align: center;"><u>END</u></p>	<p>4.2.S.1 Inability to Monitor a Significant Transient in Progress.</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>4.2.S.1-1 The following conditions exist:</p> <p>Loss of most (>50%) Annunciators associated with safety systems.</p> <p style="text-align: center;"><u>AND</u></p> <p>A SIGNIFICANT PLANT TRANSIENT is in progress.</p> <p style="text-align: center;"><u>AND</u></p> <p>Loss of the OAC.</p> <p style="text-align: center;"><u>AND</u></p> <p>Inability to provide manual monitoring of any of the following Critical Safety Functions:</p> <ul style="list-style-type: none">• subcriticality• core cooling• heat sink• containment. <p style="text-align: center;"><u>END</u></p>	<p style="text-align: center;"><u>END</u></p>

Enclosure 4.2
System Malfunctions

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.2.U.3 Fuel Clad Degradation.

OPERATING MODE: 1, 2, 3, 4, 5

4.2.U.3-1 Dose Equivalent I-131 greater than the Technical Specifications allowable limit.

4.2.U.4 Reactor Coolant System (NCS) Leakage.

OPERATING MODE: 1, 2, 3, 4

4.2.U.4-1 Unidentified leakage \geq 10 gpm.

4.2.U.4-2 Pressure boundary leakage \geq 10 gpm.

4.2.U.4-3 Identified leakage \geq 25 gpm

4.2.U.5 Unplanned Loss of All Onsite or Offsite Communications.

OPERATING MODE: ALL

4.2.U.5-1 Loss of all onsite communications capability (internal phone system, PA system, onsite radio system) affecting the ability to perform routine operations.

4.2.U.5-2 Loss of all offsite communications capability (Duke Emergency Management Network [DEMNET], NRC ETS lines, offsite radio system, commercial phone system) affecting the ability to communicate with offsite authorities.

END

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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<u>UNUSUAL EVENT</u>		<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
4.3.U.1	Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds Two Times the SLC Limits for 60 Minutes or Longer.	4.3.A.1 Any Unplanned Release of Gaseous or Liquid Radioactivity to the Environment that Exceeds 200 Times the SLC limits for 15 Minutes or Longer.	4.3.S.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity Exceeds 100 mrem TEDE or 500 mrem CDE Adult Thyroid for the Actual or Projected Duration of the Release.	4.3.G.1 Boundary Dose Resulting from an Actual or Imminent Release of Radioactivity that Exceeds 1000 mrem TEDE or 5000 mrem CDE Adult Thyroid for the Actual or Projected Duration of the Release.
OPERATING MODE: ALL		OPERATING MODE: ALL	OPERATING MODE: ALL	OPERATING MODE: ALL
4.3.U.1-1	A valid Trip 2 alarm on radiation monitor EMF-49L or EMF-57 for ≥ 60 minutes or will likely continue for ≥ 60 minutes which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/014.	4.3.A.1-1 A valid indication on radiation monitor EMF- 49L or EMF-57 of $\geq 1.2E+05$ cpm for ≥ 15 minutes or will likely continue for ≥ 15 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure HP/0/B/1009/014.	4.3.S.1-1 A valid indication on radiation monitor EMF-36L of $\geq 2.7E+06$ cpm sustained for ≥ 15 minutes.	4.3.G.1-1 A valid indication on radiation monitor EMF-36H of $\geq 8.3E+03$ cpm sustained for ≥ 15 minutes.
4.3.U.1-2	A valid indication on radiation monitor EMF- 36L of $\geq 3.00E+04$ cpm for ≥ 60 minutes or will likely continue for ≥ 60 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure AD-EP-ALL-0202.		4.3.S.1-2 Dose assessment team calculations indicate dose consequences greater than 100 mrem TEDE or 500 mrem CDE Adult Thyroid at the site boundary.	4.3.G.1-2 Dose assessment team calculations indicate dose consequences greater than 1000 mrem TEDE or 5000 mrem CDE Adult Thyroid at the site boundary.

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Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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UNUSUAL EVENT

4.3.U.1-3 Gaseous effluent being released exceeds two times SLC 16.11-6 for ≥ 60 minutes as determined by RP procedure.

4.3.U.1-4 Liquid effluent being released exceeds two times SLC 16.11-1 for ≥ 60 minutes as determined by RP procedure.

Note: If the monitor reading is **sustained** for the time period indicated in the EAL AND the required assessments (procedure calculations) cannot be completed within this time period, declaration must be made based on the **valid** radiation monitor reading.

(Continued)

ALERT

4.3.A.1-2 A **valid** indication on radiation monitor EMF- 36L of $\geq 5.4E+05$ cpm for ≥ 15 minutes or will likely continue for ≥ 15 minutes, which indicates that the release may have exceeded the initiating condition and indicates the need to assess the release with procedure AD-EP-ALL-0202.

4.3.A.1-3 Gaseous effluent being released exceeds 200 times the level of SLC 16.11-6 for ≥ 15 minutes as determined by RP procedure.

4.3.A.1-4 Liquid effluent being released exceeds 200 times the level of SLC 16.11-1 for ≥ 15 minutes as determined by RP procedure.

Note: If the monitor reading is **sustained** for the time period indicated in the EAL AND the required assessments (procedure calculations) cannot be completed within this time period, declaration must be made based on the **valid** radiation monitor reading.

(Continued)

SITE AREA EMERGENCY

4.3.S.1-3 Analysis of field survey results or field survey samples indicates dose consequences greater than 100 mrem TEDE or 500 mrem CDE Adult Thyroid at the **site boundary**.

Note 1: These EMF readings are calculated based on average annual meteorology, site boundary dose rate, and design unit vent flow rate. Calculations by the dose assessment team use actual meteorology, release duration, and unit vent flow rate. Therefore, these EMF readings should not be used if dose assessment team calculations are available.

Note 2: If dose assessment team calculations cannot be completed in 15 minutes, then **valid** monitor reading should be used for emergency classification.

END

GENERAL EMERGENCY

4.3.G.1-3 Analysis of field survey results or field survey samples indicates dose consequences greater than 1000 mrem TEDE or 5000 mrem CDE Adult Thyroid at the **site boundary**.

Note 1: These EMF readings are calculated based on average annual meteorology, site boundary dose rate, and design unit vent flow rate. Calculations by the dose assessment team use actual meteorology, release duration, and unit vent flow rate. Therefore, these EMF readings should not be used if dose assessment team calculations are available.

Note 2: If dose assessment team calculations cannot be completed in 15 minutes, then **valid** monitor reading should be used for emergency classification.

END

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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UNUSUAL EVENT

4.3.U.2 Unexpected Increase in Plant Radiation or Airborne Concentration.

OPERATING MODE: ALL

4.3.U.2-1 Indication of **uncontrolled** water level decrease of greater than 6 inches in the reactor refueling cavity with all irradiated fuel assemblies remaining covered by water.

4.3.U.2-2 **Uncontrolled** water level decrease of greater than 6 inches in the spent fuel pool and fuel transfer canal with all irradiated fuel assemblies remaining covered by water.

4.3.U.2-3 **Unplanned valid** area EMF reading increases by a factor of 1,000 over normal levels as shown in Enclosure 4.10.

END

ALERT

4.3.A.2 Major Damage to Irradiated Fuel or Loss of Water Level that Has or Will Result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel.

Does not apply to spent fuel in dry cask storage. Refer to EPLAN Section D basis document

OPERATING MODE: ALL

4.3.A.2-1 An **unplanned valid** trip II alarm on any of the following radiation monitors:

Spent Fuel Building
Refueling Bridge
1EMF-15
2EMF-4

Spent Fuel Pool Ventilation
1EMF-42
2EMF-42

Reactor Building Refueling
Bridge (applies to Mode 6 and
No Mode Only)
1EMF-17
2EMF-2

Containment Noble Gas
Monitor (Applies to Mode 6 and
No Mode Only)

1EMF-39
2EMF-39

(Continued)

SITE AREA EMERGENCY

GENERAL EMERGENCY

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.3.A.2-2 Plant personnel report that water level drop in reactor refueling cavity, spent fuel pool, or fuel transfer canal has or will exceed makeup capacity such that any irradiated fuel will become uncovered.

4.3.A.2-3 NC system wide range level <95% after initiation of NC system make-up.

AND

Any irradiated fuel assembly not capable of being lowered into spent fuel pool or reactor vessel.

4.3.A.2-4 Spent Fuel Pool or Fuel Transfer Canal level decrease of >2 feet after initiation of makeup.

AND

Any irradiated fuel assembly not capable of being fully lowered into the spent fuel pool racks or transfer canal fuel transfer system basket.

(Continued)

Enclosure 4.3

Abnormal Rad Levels/Radiological Effluent

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.3.A.3 Release of Radioactive Material or Increases 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: ALL

4.3.A.3-1 Valid reading on IEMF-12 greater than 15 mrem/hr in the Control Room.

4.3.A.3-2 Valid indication of radiation levels greater than 15 mrem/hr in the Central Alarm Station (CAS) or Secondary Alarm Station (SAS).

4.3.A.3-3 Valid radiation monitor reading exceeds the levels shown in Enclosure 4.10.

END

Enclosure 4.4

Loss of Shutdown Functions

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

END

4.4.A.1 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: 1, 2, 3

4.4.A.1-1 The following conditions exist:

Valid reactor trip signal received or required and automatic reactor trip was not successful.

AND

Manual reactor trip from the control room is successful and reactor power is less than 5% and decreasing.

(Continued)

4.4.S.1 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: 1

4.4.S.1-1 The following conditions exist:

Valid reactor trip signal received or required and automatic reactor trip was not successful.

AND

Manual reactor trip from the control room was not successful in reducing reactor power to less than 5% and decreasing.

(Continued)

4.4.G.1 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: 1

4.4.G.1-1 The following conditions exist:

Valid reactor trip signal received or required and automatic reactor trip was not successful.

AND

Manual reactor trip from the control room was not successful in reducing reactor power to less than 5% and decreasing.

AND

EITHER of the following conditions exist:

- Core Cooling CSF-RED
- Heat Sink CSF-RED.

END

Enclosure 4.4

Loss of Shutdown Functions

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UNUSUAL EVENT

ALERT

4.4.A.2 Inability to Maintain Plant
in Cold Shutdown.

OPERATING MODE: 5, 6

4.4.A.2-1 Total loss of ND and/or RN
and/or KC.

AND

One of the following:

- Inability to maintain
reactor coolant temperature
below 200°F
- Uncontrolled reactor
coolant temperature rise to
>180°F.

END

SITE AREA EMERGENCY

4.4.S.2 Complete Loss of Function
Needed to Achieve or
Maintain Hot Shutdown.

OPERATING MODE: 1, 2, 3, 4

4.4.S.2-1 Subcriticality CSF-RED.

4.4.S.2-2 Heat Sink CSF-RED.

4.4.S.3 Loss of Water Level in the
Reactor Vessel That Has or
Will Uncover Fuel in the
Reactor Vessel.

OPERATING MODE: 5, 6

4.4.S.3-1 Failure of heat sink causes loss
of cold shutdown conditions.

AND

Lower range Reactor Vessel
Level Indication System
(RVLIS) decreasing after
initiation of NC system
makeup.

4.4.S.3-2 Failure of heat sink causes loss
of cold shutdown conditions:

AND

Reactor Coolant (NC) system
mid or wide range level less
than 11% and decreasing after
initiation of NC system
makeup.

(Continued)

GENERAL EMERGENCY

Enclosure 4.4
Loss of Shutdown Functions

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.4.S.3-3 Failure of heat sink causes loss
of cold shutdown conditions.

AND

Either train ultrasonic level
indication less than 7.25% and
decreasing after initiation of
NC system makeup.

END

Enclosure 4.5

Loss of Power

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<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
4.5.U.1 Loss of All Offsite Power to Essential Busses for Greater Than 15 Minutes.	4.5.A.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses During Cold Shutdown Or Refueling Mode.	4.5.S.1 Loss of All Offsite Power and Loss of All Onsite AC Power to Essential Busses.	4.5.G.1 Prolonged Loss of All (Offsite and Onsite) AC Power.
OPERATING MODE: 1, 2, 3, 4		OPERATING MODE: 1, 2, 3, 4	OPERATING MODE: 1, 2, 3, 4
4.5.U.1-1 The following conditions exist: Loss of offsite power to essential buses ETA and ETB for greater than 15 minutes.	OPERATING MODE: 5, 6, No Mode 4.5.A.1-1 Loss of all offsite and onsite AC power as indicated by: Loss of power on essential buses ETA and ETB.	4.5.S.1-1 Loss of all offsite and onsite AC power as indicated by: Loss of power on essential buses ETA and ETB.	4.5.G.1-1 Prolonged loss of all offsite and onsite AC power as indicated by: Loss of power on essential buses ETA and ETB for greater than 15 minutes.
<u>AND</u> Both emergency diesel generators are supplying power to their respective essential busses.	<u>AND</u> Failure to restore power to at least one essential bus within 15 minutes.	<u>AND</u> Failure to restore power to at least one essential bus within 15 minutes.	<u>AND</u> Standby Shutdown Facility (SSF) fails to supply NC pump seal injection OR CA supply to Steam Generators.
<u>(Continued)</u>	<u>(Continued)</u>	<u>(Continued)</u>	<u>(Continued)</u>

Enclosure 4.5

Loss of Power

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<u>UNUSUAL EVENT</u>	<u>ALERT</u>	<u>SITE AREA EMERGENCY</u>	<u>GENERAL EMERGENCY</u>
OPERATING MODE: 5, 6, No Mode	4.5.A.2 AC power to essential busses reduced to a single power source for greater than 15 minutes such that an additional single failure could result in station blackout.	4.5.S.2 Loss of All Vital DC Power.	At least one of the following conditions exist:
4.5.U.1-2 The following conditions exist: Loss of offsite power to essential buses ETA and ETB for greater than 15 minutes.		OPERATING MODE: 1, 2, 3, 4	
<u>AND</u> One emergency diesel generator is supplying power to its respective essential bus.	OPERATING MODE: 1, 2, 3, 4	4.5.S.2-1 The following conditions exist: Unplanned loss of both unit related busses: EBA and EBD both <112 VDC, and EBB and EBC both <109 VDC.	<ul style="list-style-type: none">• Restoration of at least one essential bus within 4 hours is <u>NOT</u> likely• Indication of continuing degradation of core cooling based on Fission Product Barrier monitoring.
4.5.U.2 Unplanned Loss of Required DC Power During Cold Shutdown or Refueling Mode for Greater than 15 Minutes.	4.5.A.2-1 The following condition exists: AC power capability has been degraded to one essential bus powered from a single power source for > 15 min. due to the loss of all but one of:	<u>AND</u> Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.	<u>END</u>
OPERATING MODE: 5, 6	SATA SATB ATC ATD D/G A D/G B	<u>END</u>	
4.5.U.2-1 The following conditions exist: Unplanned loss of both unit related busses: EBA and EBD both <112 VDC, and EBB and EBC both <109 VDC.	<u>END</u>		
<u>AND</u> Failure to restore power to at least one required DC bus within 15 minutes from the time of loss.			
<u>END</u>			

Enclosure 4.6

Fire/Explosion and Security Events

RP/0/A/5000/001

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UNUSUAL EVENT

4.6.U.1 Fire Within Protected Area Boundary **NOT** Extinguished Within 15 Minutes of Detection **OR** Explosion Within the Protected Area Boundary.

OPERATING MODE: ALL

4.6.U.1-1 Fire in any of the following areas **NOT** extinguished within 15 minutes of control room notification or verification of a control room fire alarm.

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- CAS
- SAS
- Doghouses
- FWST
- Turbine Building
- Service Building
- Monitor Tank Building
- ISFSI
- Unit 1/2 Transformer Yard Areas

(Continued)

ALERT

4.6.A.1 Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.

OPERATING MODE: 1, 2, 3, 4, 5, 6

4.6.A.1-1 The following conditions exist:
(Non-security events)
Fire or explosion in any of the following areas:

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- CAS
- SAS
- FWST
- Doghouses (Applies in Mode 1, 2, 3, 4 only).

AND

One of the following:

- Affected safety system parameter indications show degraded performance

(Continued)

SITE AREA EMERGENCY

4.6.S.1 HOSTILE ACTION within the PROTECTED AREA

OPERATING MODE: ALL

4.6.S.1-1 A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the CNS Security Shift Supervision

END

GENERAL EMERGENCY

4.6.G.1 HOSTILE ACTION Resulting in Loss of Physical Control of the Facility.

OPERATING MODE: ALL

4.6.G.1-1 A HOSTILE ACTION has occurred such that plant personnel are unable to operate equipment required to maintain safety functions.

4.6.G.1-2 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.

END

Enclosure 4.6

Fire/Explosion and Security Events

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UNUSUAL EVENT

4.6.U.1-2 Report by plant personnel of an unanticipated **explosion** within **protected area** boundary resulting in **visible damage** to permanent structure or equipment or a loaded cask in the ISFSI.

4.6.U.2 **Confirmed SECURITY CONDITION or Threat Which Indicates a Potential Degradation in the Level of Safety of the Plant.**

OPERATING MODE: All

4.6.U.2-1 A **SECURITY CONDITION** that does **NOT** involve a **HOSTILE ACTION** as reported by the CNS Security Shift Supervision.

4.6.U.2-2 A credible site-specific security threat notification.

4.6.U.2-3 A validated notification from NRC providing information of an aircraft threat.

END

ALERT

- Plant personnel report **visible damage** to permanent structures or equipment within the specified area required to establish or maintain safe shutdown within the specifications.

Note: Only one train of a system needs to be affected or damaged in order to satisfy this condition.

4.6.A.2 **Fire or Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown.**

OPERATING MODE: No Mode

4.6.A.2-1 The following conditions exist:
(Non-security events)
Fire or explosion in any of the following areas:

- Spent Fuel Pool
- Auxiliary Building.
- RN Pump house

AND

One of the following:

- Spent Fuel Pool level and/or temperature show degraded performance

(Continued)

SITE AREA EMERGENCY

GENERAL EMERGENCY

Enclosure 4.6

Fire/Explosion and Security Events

RP/0/A/5000/001

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

- Plant personnel report **visible damage** to permanent structures or equipment supporting spent fuel pool cooling.

4.6.A.3 HOSTILE ACTION Within the OWNER CONTROLLED AREA or Airborne Attack Threat.

OPERATING MODE: ALL

4.6.A.3-1 A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the CNS Security Shift Supervision

4.6.A.3-2 A validated notification from NRC of airliner attack threat within 30 minutes of the site.

END

Enclosure 4.7

Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

RP/0/A/5000/001

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UNUSUAL EVENT

4.7.U.1 Natural and Destructive Phenomena Affecting the Protected Area.

OPERATING MODE: ALL

4.7.U.1-1 Tremor felt and valid alarm on the Syscom Seismic Monitoring System (OAC C1D2252).

4.7.U.1-2 Report by plant personnel of tornado striking within **protected area** boundary/ISFSI.

4.7.U.1-3 Vehicle crash into plant structures or systems within **protected area** boundary/ISFSI.

4.7.U.1-4 Report of turbine failure resulting in casing penetration or damage to turbine or generator seals.

4.7.U.1-5 Independent Spent Fuel Cask tipped over or dropped greater than 24 inches.

4.7.U.1-6 Uncontrolled flooding in the ISFSI area.

4.7.U.1-7 Tornado generated missiles(s) impacting the ISFSI.
(Continued)

ALERT

4.7.A.1 Natural and Destructive Phenomena Affecting the Plant Vital Area.

OPERATING MODE: ALL

4.7.A.1-1 Valid "OBE Exceeded" Alarm on 1AD-4.B/8

4.7.A.1-2 Tornado or high winds:

Tornado striking plant structures within the **vital area**:

- Reactor Building
- Auxiliary Building
- FWST
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- Doghouses
- CAS
- SAS

OR

sustained winds \geq 74 mph for > 15 minutes.

(Continued)

SITE AREA EMERGENCY

4.7.S.1 Control Room Evacuation Has Been Initiated and Plant Control Cannot Be Established.

OPERATING MODE: ALL

4.7.S.1-1 The following conditions exist:

Control Room evacuation has been initiated per AP/1(2)/A/5500/017

AND

Control of the plant cannot be established from the ASP or the SSF within 15 minutes.

4.7.S.2 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of Site Area Emergency.

OPERATING MODE: ALL

4.7.S.2-1 Other conditions exist which in the Judgement of the Emergency Coordinator/EOF Director indicate actual or likely major failures of plant functions needed for protection of the public.

END

GENERAL EMERGENCY

4.7.G.1 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of General Emergency.

OPERATING MODE: ALL

4.7.G.1-1 Other conditions exist which in the Judgement of the Emergency Coordinator/EOF Director indicate:

(1) actual or **imminent** substantial core degradation with potential for loss of containment

OR

(2) potential for **uncontrolled** radionuclide releases. These releases can reasonably be expected to exceed Environmental Protection Agency Protective Action Guideline levels outside the site boundary.

END

Enclosure 4.7

Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

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UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

4.7.U.2 Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant.

OPERATING MODE: ALL

4.7.U.2-1 Report or detection of toxic or flammable gases that could enter within the **site boundary** in amounts that can affect safe operation of the plant.

4.7.U.2-2 Report by Local, County or State Officials for potential evacuation of site personnel based on offsite event.

4.7.U.3 Other Conditions Existing Which in the Judgement of the Emergency Coordinator/EOF Director Warrant Declaration of an Unusual Event.

OPERATING MODE: ALL

4.7.U.3-1 Other conditions exist which in the judgement of the Emergency Coordinator/EOF Director indicate a potential degradation of the level of safety of the plant.

END

4.7.A.1-3 Visible structural damage caused by either:

- Vehicle crashes

OR

- Turbine failure generated missiles,

OR

- Other catastrophic events

on any of the following plant structures:

- Reactor Building
- Auxiliary Building
- FWST
- Diesel Generator Rooms
- Control Room
- RN Pump House
- SSF
- Doghouses
- CAS
- SAS

(Continued)

Enclosure 4.7

Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

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UNUSUAL EVENT

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SITE AREA EMERGENCY

GENERAL EMERGENCY

**4.7.A.2 Release of Toxic or
Flammable Gases Within a
Facility Structure Which
Jeopardizes Operation of
Systems Required to
Maintain Safe Operations or
to Establish or Maintain
Cold Shutdown.**

OPERATING MODE: ALL

- 4.7.A.2-1** Report or detection of toxic gases within a Facility Structure in concentrations that will be life threatening to plant personnel.
- 4.7.A.2-2** Report or detection of flammable gases within a Facility Structure in concentrations that will affect the safe operation of the plant.

Structures for the above
EALs:

- Reactor Building
- Auxiliary Building
- Diesel Generator Rooms
- Control Room
- RN Pumphouse
- SSF
- CAS
- SAS

(Continued)

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Natural Disasters, Hazards, And Other Conditions Affecting Plant Safety

UNUSUAL EVENT

ALERT

SITE AREA EMERGENCY

GENERAL EMERGENCY

**4.7.A.3 Control Room Evacuation
Has Been Initiated.**

OPERATING MODE: ALL

**4.7.A.3-1 Control Room evacuation has
been initiated per
AP/1(2)/A/5500/017.**

**4.7.A.4 Other Conditions Existing
Which in the Judgement of
the Emergency
Coordinator/EOF Director
Warrant Declaration of an
Alert.**

OPERATING MODE: ALL

**4.7.A.4-1 Other conditions exist which
in the Judgement of the
Emergency Coordinator/EOF
Director indicate that plant
safety systems may be
degraded and that increased
monitoring of plant functions
is warranted.**

END

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ALERT- Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of hostile action. Any releases are expected to be limited to small fractions of the EPA protective action guideline exposure levels.

ALL (As relates to Operating Mode Applicability) - Modes 1, 2, 3,4,5,6 and No Mode (Defueled)

BOMB - Refers to an explosive device suspected of having sufficient force to damage plant systems or structures.

CARF - Containment Air Return Fan.

CIVIL DISTURBANCE - A group of ten (10) or more people violently protesting station operations or activities at the site. A civil disturbance is considered to be violent when force has been used in an attempt to injure site personnel or damage plant property.

COGNIZANT FACILITY STAFF - Any member of facility staff, who by virtue of training and experience, is qualified to assess the indications or reports for validity and to compare the same to the EALs in the licensee's emergency classification scheme (Does not include staff whose positions require they report, rather than assess, abnormal conditions to the facility.).

CREDIBLE THREAT - A threat should be considered credible when:

- Physical evidence supporting the threat exists.
- Information independent (law enforcement) from the actual threat message exists that supports the threat.
- A specific group or organization claims responsibility for the threat.

EPA PAG – Environmental Protection Agency Protective Action Guidelines for exposure to a release of radioactive material.

EMERGENCY RELEASE - Any unplanned, quantifiable radiological release to the environment during an emergency event. The release does not have to be related to a declared emergency.

EXPLOSION - A rapid, violent unconfined combustion, or a catastrophic failure of pressurized equipment (e.g., a steamline or feedwater line break) that imparts energy sufficient to potentially damage or creates shrapnel to actually damage permanent structures, systems or components. An electrical breaker flash that creates shrapnel and results in damage to other components beyond scorching should also be considered.

EXTORTION - An attempt to cause an action at the site by threat of force.

FIRE - Combustion characterized by heat and light. Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flames is preferred but is NOT required if large quantities of smoke and heat are observed. An electrical breaker flash that creates high temperatures for a short duration and merely localized scorching to that breaker and its compartment should not be considered a fire.

FRESHLY OFF-LOADED REACTOR CORE - The complete removal and relocation of all fuel assemblies from the reactor core and placed in the spent fuel pool. (Typical of a "No Mode" operation during a refuel outage that allows safety system maintenance to occur and results in maximum decay heat load in the spent fuel pool system.)

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FUNCTIONAL – A component is fully capable of meeting its design function. It would be declared **INOPERABLE** if unable to meet Technical Specifications.

GENERAL EMERGENCY- Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or hostile action that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA protective action guideline exposure levels offsite for more than the immediate site area.

HOSTAGE - A person(s) held as leverage against the station to ensure demands will be met by the station.

HOSTILE ACTION - An act toward an NPP 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.

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** time frames are specified, they shall apply.

INOPERABLE – A component does not meet Technical Specifications. The component may be functional, capable of meeting its design.

INABILITY TO DIRECTLY MONITOR - Operational Aid Computer data points are unavailable or gauges/panel indications are not readily available to the operator.

INTRUSION - 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**.

ISFSI - Independent Spent Fuel Storage Installation - Includes the components approved for loading and storage of spent fuel assemblies.

LOSS - A component is **INOPERABLE** and not **FUNCTIONAL**.

NO MODE - Defueled.

OWNER CONTROLLED AREA - Area outside the protected area fence that immediately surrounds the plant. Access to this area is generally restricted to those entering on official business.

PROJECTILE - An object directed toward a NPP that could cause concern for its continued operability, reliability or personnel safety.

PROLONGED - A duration beyond normal limits, defined as "greater than 15 minutes" or as determined by the judgment of the Emergency Coordinator.

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PROTECTED AREA - Typically, the site specific area which normally encompasses all controlled areas within the security **PROTECTED AREA** fence.

REACTOR COOLANT SYSTEM (RCS/NCS) LEAKAGE - RCS Operational Leakage as defined in the Technical Specification Basis B 3.4.13.

RUPTURED (As relates to Steam Generator) - Existence of primary to secondary leakage of a magnitude sufficient to require or cause a reactor trip and safety injection.

SABOTAGE - Deliberate damage, misalignment, or misoperation of plant equipment with the intent to render the equipment unavailable. 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 PLANT TRANSIENT- 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. (5) Thermal power oscillations >10%.

SITE AREA EMERGENCY - Events are in process or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or **HOSTILE ACTION** that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to exceed **EPA** Protective Action Guidelines to exposure levels beyond the site boundary.

SITE BOUNDARY - That area, including the protected area, in which Duke Energy has the authority to control all activities, including exclusion or removal of personnel and property.

SLC - Selected Licensee Commitments.

SUSTAINED - A duration of time long enough to confirm that the CSF is valid (not momentary).

TERMINATION - Exiting the emergency condition.

TOTAL EFFECTIVE DOSE EQUIVALENT (TEDE) - The sum of external dose exposure to radioactive plume, to radionuclides deposited on the ground by the plume, and the internal exposure inhaled radionuclides deposited in the body.

TOXIC GAS - A gas that is dangerous to life or health by reason of inhalation or skin contact (e.g. chlorine).

UNCONTROLLED - Event is not the result of planned actions by the plant staff.

UNPLANNED - An event or action is **UNPLANNED** if it is not the expected result of normal operations, testing, or maintenance. Events that result in corrective or mitigative actions being taken in accordance with abnormal or emergency procedures are **UNPLANNED**.

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UNUSUAL EVENT- Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

VALID - An indication or report or condition is considered to be **VALID** when it is conclusively verified by: (1) an instrument channel check, or (2) indications on related or redundant instrumentation, or (3) by direct observation by plant personnel such that doubt related to the instrument's operability, the condition's existence or the report's accuracy is removed. Implicit in this definition is the need for timely assessment.

VIOLENT - Force has been used in an attempt to injure site personnel or damage plant property.

VISIBLE DAMAGE - Damage to equipment or structure that is readily observable without measurements, testing, or analyses. Damage is sufficient to cause concern regarding the continued operability or reliability of affected structure, system, or component. Example damage: deformation due to heat or impact, denting, penetration, rupture, cracking, paint blistering.

VITAL AREA - Areas within the **PROTECTED AREA** that house equipment important for nuclear safety. Access to a **VITAL AREA** is allowed only if an individual has been authorized to be in that area per the security plan. Therefore, **VITAL AREA** is a security term.

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Emergency Declaration Guidelines

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THE FOLLOWING GUIDANCE IS TO BE USED BY THE EMERGENCY COORDINATOR IN ASSESSING EMERGENCY CONDITIONS.

- Assessment, classification and declaration of any applicable emergency condition should be completed with 15 minutes after indication or information is available to **COGNIZANT FACILITY STAFF** that an EAL threshold has been exceeded.
- The Emergency Coordinator shall review all applicable initiating events to ensure proper classification.
- The BASIS Document (located in Section D of the Catawba Nuclear Site Emergency Plan) is available for review if any questions arise over proper classification.
- Emergencies are declared for the site. If an event results in multiple emergency action levels on a unit or different emergency action levels on each unit, then the emergency declaration shall be based on the higher classification. Information relating to the unit with the lesser classification will be noted as additional information on the Emergency Notification Form (ENF).
- If an event occurs, and a lower or higher plant operating mode is reached before the classification can be made, the classification shall be based on the mode that existed at the time the event occurred.
- The fission product barrier matrix is applicable only to those events that occur at (Mode 1-4) hot shutdown or higher. An event that is recognized at cold shutdown or lower (Mode 5 or 6) shall not be classified using the fission product barrier matrix. Reference would be made to the other enclosures that provide emergency action levels for specific events (e.g. severe weather, fire, security).
- If a transient event should occur, the following guidance is provided.
 1. Some emergency action levels specify that a condition exist for a specific duration prior to declaration.
 - a. For these EALs, the classification is made when the Emergency Coordinator assessment concludes that the specified duration is exceeded or will be exceeded (i.e. condition cannot be reasonably corrected before the duration elapses), whichever is sooner.
 - b. If a plant condition exceeding EAL criteria is corrected before the specified duration time is exceeded, the event is **NOT** classified by that EAL. Lower Severity EALs, if any, shall be reviewed for possible applicability in these cases.

Emergency Declaration Guidelines

2. If a plant condition exceeding EAL criteria is not recognized at the time of occurrence, but is identified well after the condition has occurred (e.g. as a result of routine log or record review) and the condition no longer exists, an emergency shall **NOT** be declared. Reporting under 10CFR50.72 may be required. Such a condition could occur, for example, if a follow-up evaluation of an abnormal condition uncovers evidence that the condition was more severe than earlier believed.
3. If an emergency classification is warranted, but the plant condition is corrected prior to declaration and notification, the Emergency Coordinator must consider the potential that the initiating condition (e.g. Failure of Reactor Protection System or earthquake) may have caused plant damage that warrants augmenting the on-shift personnel via activation of the Emergency Response Organization. The following action shall be taken:
 - a. For UNUSUAL EVENTS, the condition shall be declared and notifications made. The event may be terminated in the same notification or in a follow-up notification.
 - b. For ALERT, SITE AREA EMERGENCY, and GENERAL EMERGENCY, the event shall be declared and the emergency response organization activated.

DETERMINATION OF "EVENT TIME" (TIME THE 15 MINUTE CLOCK STARTS)

1. Event time is the time at which indications become available that an EAL has been exceeded.
2. Event time is the time the 15 minutes clock starts for classification.
3. The event classification time shall be entered on the emergency notification form.

MOMENTARY ENTRY INTO A HIGHER CLASSIFICATION

If, while in an emergency classification, the specified EALs of a higher classification are met momentarily, and in the judgment of the Emergency Coordinator are not likely to recur, the entry into the higher classification must be acknowledged. Acknowledgment is performed as follows:

If this condition occurs prior to the initial notification to the emergency response organization and off site agencies, the initial message should note that the site is currently in the lower classification, but had momentarily met the criteria for the higher classification. It should also be noted that plant conditions have improved and stabilized to the point that the criteria for the higher classification are not expected to be repeated.

Enclosure 4.10**Radiation Monitor Readings for Enclosure 4.3**

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Note: These values are not intended to apply to anticipated temporary increases due to planned events (e.g. incore detector movement, radwaste container movement, depleted resin transfers, etc.).

Detector	Elevation	Column	Identifier	Unusual Event mR/hr	Alert mR/hr
1EMF-1	522'	FF, 57	Auxiliary Building Corridor	500	5000
1EMF-3	543'	GG, 55	Unit 1 Charging Pump Area	100	5000
1EMF-4	543'	GG, 59	Unit 2 Charging Pump Area	100	5000
1EMF-7	560'	NN, 55	Unit 1 Auxiliary Building Corridor	1500	5000
1EMF-8	560'	NN, 59	Unit 2 Auxiliary Building Corridor	500	5000
1EMF-9	577'	LL, 55	Unit 1 Aux. Building Filter Hatch	100	5000
1EMF-10	577'	LL, 58	Unit 2 Aux. Building Filter Hatch	100	5000
1EMF-22	594'	KK, 53	Containment Purge Filter Area	100	5000
2EMF-9	594'	KK, 61	Containment Purge Filter Area	100	5000