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January 22, 2002

U. S. Nuclear Regulatory Commission
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Washington, D. C. 20555

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270, -287
Emergency Plan Implementing Procedures Manual
Volume C Revision 2002-01

Please find attached for your use and review copies of the revision to the
Oconee Nuclear Station Emergency Plan: Volume C Revision 2002-01 January 2002.

This revision is being submitted in accordance with 10 CFR 50-54(q) and does
not decrease the effectiveness of the Emergency Plan or the Emergency Plan
Implementing Procedures.

Any questions or concerns pertaining to this revision please call Mike Thorne,
Emergency Planning Manager at 864-885-3210.

By copy of this letter, two copies of this revision are being provided to the
NRC, Region II, Atlanta, Georgia.

Very truly yours,

W. R. McCollum, Jr.
VP, Oconee Nuclear Site

xc: (w/2 copies of attachments)
Mr. Luis Reyes,
Regional Administrator, Region II
U. S. Nuclear Regulatory Commission
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w/copy of attachments
Mr. Steven Baggett
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(w/o Attachments, Oconee Nuclear Station)
NRC Resident Inspector
M. D. Thorne, Manager, Emergency Planning

A045

January 22, 2002

OCONEE NUCLEAR SITE
INTRASITE LETTER

SUBJECT: Emergency Plan Implementing Procedures
 Volume C, Revision 2002-01

Please make the following changes to the Emergency Plan Implementing Procedures Volume C by following the below instructions.

REMOVE

Cover Sheet - Rev. 2001-12

Table of Contents, Page 1 & 2

RP/0/B/1000/001 - 05/14/01

Human Resources Procedure
04/26/00

ADD

Cover Sheet Rev. 2002-01

Table of Contents, Page 1 & 2

RP/0/B/1000/001 - 01/15/02

Human Resources Procedure
01/07/02

DUKE POWER

EMERGENCY PLAN IMPLEMENTING PROCEDURES VOLUME C



APPROVED:

W. W. Foster, Manager
Safety Assurance

1/22/02

Date Approved

01/22/02

Effective Date

VOLUME C
REVISION 2002-01
JANUARY 2002

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HP/0/B/1009/018	Off-Site Dose Projections	05/19/00
HP/0/B/1009/020	Estimating Food Chain Doses Under Post Accident Conditions	10/09/98
HP/0/B/1009/021	Source Term Assessment Of A Gaseous Release From Non-Routine Release Points	12/01/97
HP/0/B/1009/022	On Shift Off-Site Dose Projections	10/08/01
RP/0/B/1000/001	Emergency Classification	01/15/02
RP/0/B/1000/002	Control Room Emergency Coordinator Procedure	11/05/01
RP/0/B/1000/003 A	ERDS Operation	12/03/98
RP/0/B/1000/007	Security Event	11/05/01
RP/0/B/1000/009	Procedure For Site Assembly	11/15/01
RP/0/B/1000/010	Procedure For Emergency Evacuation/Relocation Of Site Personnel	04/24/01
RP/0/B/1000/015 A	Offsite Communications From The Control Room	12/11/01
RP/0/B/1000/015 B	Offsite Communications From The Technical Support Center	12/11/01
RP/0/B/1000/015 C	Offsite Communications From The Emergency Operations Facility	12/11/01
RP/0/B/1000/016	Medical Response	01/30/01
RP/0/B/1000/017	Spill Response	11/30/00
RP/0/B/1000/018	Core Damage Assessment	09/30/97
RP/0/B/1000/019	Technical Support Center Emergency Coordinator Procedure	12/05/01
RP/0/B/1000/020	Emergency Operations Facility Director Procedure	12/05/01
RP/0/B/1000/021	Operations Interface (EOF)	04/30/01
RP/0/B/1000/022	Procedure For Site Fire Damage Assessment And Repair	09/18/01
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SR/0/B/2000/001	Standard Procedure For Public Affairs Response To The Emergency Operations Facility	03/23/00
Business Management	Business Management Emergency Plan	03/21/01
SSG Functional Area Directive 102	SSG Emergency Response Plan – ONS Specific	03/01/01
NSC – 110	Nuclear Supply Chain – SCO Emergency Response Plan	04/02/01
Engineering Directive 5.1	Engineering Emergency Response Plan	09/12/01
Human Resources Procedure	ONS Human Resources Emergency Plan	01/07/02
Radiation Protection Manual Section 11.3	Off-Site Dose Assessment And Data Evaluation	04/06/99
Radiation Protection Manual Section 11.7	Environmental Monitoring For Emergency Conditions	11/26/01
Safety Assurance Directive 6.1	Safety Assurance Emergency Response Organization	11/28/94
Safety Assurance Directive 6.2	Emergency Contingency Plan	03/27/00
Training Division	Training Division Emergency Response Guide DTG-007	12/17/01

Revision 2002-01
January, 2002

**INFORMATION
ONLY****Duke Power Company
PROCEDURE PROCESS RECORD**(1) ID No. RP/O/B/1000/001Revision No. 011**PREPARATION**(2) Station OCONEE NUCLEAR STATION(3) Procedure Title Emergency Classification(4) Prepared By Donice Kelley (Signature) Donice Kelley Date 01/09/02

(5) Requires NSD 228 Applicability Determination?

☒ Yes (New procedure or revision with major changes)☐ No (Revision with minor changes)☐ No (To incorporate previously approved changes)(6) Reviewed By Ray Waterman (QR) Date 1/14/02Cross-Disciplinary Review By _____ (QR) NA RMW Date 1/14/02Reactivity Mgmt Review By _____ (QR) NA RMW Date 1/14/02

Mgmt Involvement Review By _____ (Ops Supt) NA _____ Date _____

(7) Additional Reviews

Reviewed By _____ Date _____

Reviewed By _____ Date _____

(8) Temporary Approval (*if necessary*)

By _____ (OSM/QR) Date _____

By _____ (QR) Date _____

(9) Approved By M. Q. Thorne Date 1-15-02**PERFORMANCE** (*Compare with control copy every 14 calendar days while work is being performed.*)

(10) Compared with Control Copy _____ Date _____

Compared with Control Copy _____ Date _____

Compared with Control Copy _____ Date _____

(11) Date(s) Performed _____

Work Order Number (WO#) _____

COMPLETION

(12) Procedure Completion Verification:

☐ Unit 0 ☐ Unit 1 ☐ Unit 2 ☐ Unit 3 Procedure performed on what unit?☐ Yes ☐ NA Check lists and/or blanks initialed, signed, dated, or filled in NA, as appropriate?☐ Yes ☐ NA Required enclosures attached?☐ Yes ☐ NA Data sheets attached, completed, dated, and signed?☐ Yes ☐ NA Charts, graphs, etc. attached, dated, identified, and marked?☐ Yes ☐ NA Procedure requirements met?

Verified By _____ Date _____

(13) Procedure Completion Approved _____ Date _____

(14) Remarks (*Attach additional pages*)

Duke Power Company Oconee Nuclear Site Emergency Classification Reference Use	Procedure No. RP/0/B/1000/001
	Revision No. 011
	Electronic Reference No. OX002WOS

Emergency Classification

NOTE: This procedure is an implementing procedure to the Oconee Nuclear Site Emergency plan and must be forwarded to Emergency Planning within three (3) working days of approval.

1. Symptoms

- 1.1 This procedure describes the immediate actions to be taken to recognize and classify an emergency condition.
- 1.2 This procedure identifies the four emergency classifications and their corresponding Emergency Action Levels (EALs).
- 1.3 This procedure provides reporting requirements for non-emergency abnormal events.
- 1.4 The following guidance is to be used by the Emergency Coordinator/EOF Director in assessing emergency conditions:
 - 1.4.1 The Emergency Coordinator/EOF Director shall review all applicable initiating events to ensure proper classification.
 - 1.4.2 The BASIS Document (Volume A, Section D of the Emergency Plan) is available for review if any questions arise over proper classification.
 - 1.4.3 **IF** An event occurs on more than one unit concurrently,
THEN The event with the higher classification will be classified on the Emergency Notification Form.
 - A. Information relating to the problem(s) on the other unit(s) will be captured on the Emergency Notification Form as shown in RP/0/B/1000/015A, (Offsite Communications From The Control Room), RP/0/B/1000/015B, (Offsite Communications From The Technical Support Center) or RP/0/B/1000/015C, (Offsite Communications From The Emergency Operations Facility).
 - 1.4.4 **IF** An event occurs,
AND A lower or higher plant operating mode is reached before the Classification can be made,
THEN The classification shall be based on the mode that existed at the time the event occurred.

1.4.5 The Fission Product Barrier Matrix is applicable only to those events that occur at Hot Shutdown or higher.

A. An event that is recognized at Cold Shutdown or lower shall not be classified using the Fission Product Barrier Matrix.

1. Reference should be made to the additional enclosures that provide Emergency Action Levels for specific events (e.g., Severe Weather, Fire, Security).

1.5 **IF** A transient event should occur,

THEN Review the following guidance:

1.5.1 **IF** An Emergency Action Level (EAL) identifies a specific duration

AND The Emergency Coordinator/EOF Director assessment concludes that the specified duration is exceeded or will be exceeded, (i.e.; condition cannot be reasonably corrected before the duration elapses),

THEN Classify the event.

1.5.2 **IF** A plant condition exceeding EAL criteria is corrected before the specified duration time is exceeded,

THEN The event is **NOT** classified by that EAL.

A. Review lower severity EALs for possible applicability in these cases.

NOTE: Reporting under 10CFR50.72 may be required for the following step. 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.

1.5.3 **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,

THEN An emergency shall **NOT** be declared.

- 1.5.4 **IF** An emergency classification was warranted, but the plant condition has been corrected prior to declaration and notification,
- THEN** The Emergency Coordinator must consider the potential that the initiating condition (e.g.; Failure of Reactor Protection System) may have caused plant damage that warrants augmenting the on shift personnel through activation of the Emergency Response Organization.
- A. **IF** An *Unusual Event* condition exists,
- THEN** Make the classification as required.
1. The event may be terminated in the same notification or as a separate termination notification.
- B. **IF** An *Alert, Site Area Emergency, or General Emergency* condition exists,
- THEN** Make the classification as required,
- AND** Activate the Emergency Response Organization.
- 1.6 Emergency conditions shall be classified as soon as the Emergency Coordinator/EOF Director assessment determines that the Emergency Action Levels for the Initiating Condition have been exceeded.

2. Immediate Actions

- 2.1 Determine the operating mode that existed at the time the event occurred prior to any protection system or operator action initiated in response to the event.
- 2.2 **IF** The unit is at Hot Shutdown or higher
- AND** The condition/event affects fission product barriers,
- THEN** GO TO Enclosure 4.1, (Fission Product Barrier Matrix).
- 2.2.1 Review the criteria listed in Enclosure 4.1, (Fission Product Barrier Matrix) and make the determination if the event should be classified.

- 2.3 Review the listing of enclosures to determine if the event is applicable to one of the categories shown.
- 2.3.1 **IF** One or more categories are applicable to the event,
- 2.3.2 **THEN** Refer to the associated enclosures.
- 2.3.3 Review the EALs and determine if the event should be classified.
- A. **IF** An EAL is applicable to the event,
- THEN** Classify the event as required.
- 2.4 **IF** The condition requires an emergency classification,
- THEN** GO TO RP/0/B/1000/002, (Control Room Emergency Coordinator Procedure) Subsequent Actions.
- 2.5 Continue to review the emergency conditions to assure the current classification continues to be applicable.

3. Enclosures

	Enclosures	Page Number
4.1	Fission Product Barrier Matrix	6
4.2	System Malfunctions	7
4.3	Abnormal Rad Levels/Radiological Effluents	9
4.4	Loss Of Shutdown Functions	11
4.5	Loss of Power	13
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Enclosure 4.1
Fission Product Barrier Matrix

RP/0/B/1 .001
Page 1 of 1

DETERMINE THE APPROPRIATE CLASSIFICATION USING THE TABLE BELOW:

CIRCLE EALS CHOSEN. ADD POINTS TO CLASSIFY. (SEE NOTE BELOW)

RCS BARRIERS (BD 5-7)		FUEL CLAD BARRIERS (BD 8-9)		CONTAINMENT BARRIERS (BD 10-12)	
Potential Loss (4 Points)	Loss (5 Points)	Potential Loss (4 Points)	Loss (5 Points)	Potential Loss (1 Point)	Loss (3 Points)
RCS Leakrate > Makeup capacity of one HPI pump in normal makeup mode (approx. 160 gpm) with Letdown isolated.	RCS Leak rate > available makeup capacity as indicated by a loss of subcooling	Average of the 5 highest CETC $\geq 700^{\circ}\text{F}$	Average of the 5 highest CETC $\geq 1200^{\circ}\text{F}$	CETC $\geq 1200^{\circ}\text{F} \geq 15$ minutes OR CETC $\geq 700^{\circ}\text{F} \geq 15$ minutes with a valid RVLS reading 0"	Rapid unexplained containment pressure decrease after increase OR containment pressure or sump level not consistent with LOCA
SGTR > Makeup capacity of one HPI pump in normal makeup mode (approx. 160 gpm) with Letdown isolated.		Valid RVLS reading of 0"	Coolant activity $\geq 300 \mu\text{Ci/ml DEI}$	RB pressure ≥ 59 psig OR RB pressure ≥ 10 psig and no RBCU or RBS	Failure of secondary side of SG results in a direct opening to the environment with P/S leakage ≥ 10 gpm in the same SG
Entry into the PTS (Pressurized Thermal Shock) Operation	1RIA 57/58 reading ≥ 1.0 R/hr 2 RIA 57 reading ≥ 1.6 R/hr 2 RIA 58 reading ≥ 1.0 R/hr 3RIA 57/58 reading ≥ 1.0 R/hr	<div style="border: 1px solid black; padding: 5px;"> NOTE: RVLS is NOT valid if one or more RCPs are running OR if LPI pump(s) are running. </div>	<u>Hours Since SD</u> <u>RIA57/58 R/hr</u> 0 - < 0.5 $\geq 300/150$ 0.5 - < 2.0 $\geq 80/40$ 2.0 - 8.0 $\geq 32/16$	<u>Hours Since SD</u> <u>RIA57/58 - R/hr</u> 0 - < 0.5 $\geq 1800/860$ 0.5 - < 2.0 $\geq 400/195$ 2.0 - 8.0 $\geq 280/130$	Failure of secondary side of SG results in a direct opening to the environment with P/S leakage ≥ 10 gpm in the other SG AND Feeding SG with secondary side failure from the affected unit
HPI Forced Cooling	RCS pressure spike ≥ 2750 psig			Hydrogen concentration $\geq 9\%$	Containment isolation is incomplete and a release path to the environment exists
Emergency Coordinator/EOF Director judgment	Emergency Coordinator/EOF Director judgment	Emergency Coordinator/EOF Director judgment	Emergency Coordinator/EOF Director judgment	Emergency Coordinator/EOF Director judgment	Emergency Coordinator/EOF Director judgment
UNUSUAL EVENT (1-3 Total Points)		ALERT (4-6 Total Points)		SITE AREA EMERGENCY (7-10 Total Points)	
OPERATING MODE: 1, 2, 3, 4 ♦ Any potential loss of Containment ♦ Any loss of containment		OPERATING MODE: 1, 2, 3, 4 ♦ Any potential loss or loss of the Fuel Clad ♦ Any potential loss or loss of the RCS		OPERATING MODE: 1, 2, 3, 4 ♦ Loss of any two barriers ♦ Loss of one barrier and potential loss of either RCS or Fuel Clad Barriers ♦ Potential loss of both the RCS and Fuel Clad Barriers	
INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1,2,3,4		INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1,2,3,4		INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY .NOTIFY 1,2,3,4	
				GENERAL EMERGENCY (11-13 Total Points) OPERATING MODE: 1, 2, 3, 4 ♦ Loss of any two barriers and potential loss of the third barrier ♦ Loss of all three barriers	
				INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1,2,3,4	

NOTE: An event with multiple events could occur which would result in the conclusion that exceeding the loss or potential loss threshold is **IMMINENT** (i.e., within 1-3 hours). In this **IMMINENT LOSS** situation, use judgment and classify as if the thresholds are exceeded.

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>1. RCS LEAKAGE (BD 14)</p> <p>=====</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>A. Unidentified leakage \geq 10 gpm</p> <p>B. Pressure boundary leakage \geq 10 gpm</p> <p>C. Identified leakage \geq 25 gpm</p> <p>1. UNPLANNED LOSS OF MOST OR ALL SAFETY SYSTEM ANNUNCIATION/ INDICATION IN CONTROL ROOM FOR > 15 MINUTES (BD 15)</p> <p>=====</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>A.1 <i>Unplanned</i> loss of > 50% of the following annunciators on one unit for > 15 minutes:</p> <p>Units 1 & 3 1 SA1-9, 14-16, and 18 3 SA1-9, 14-16, and 18</p> <p>Unit 2 2 SA1-9, 14-16</p> <p>AND</p> <p>A.2 Loss of annunciators or indicators requires additional personnel (beyond normal shift complement) to safely operate the unit</p> <p>3. INABILITY TO REACH REQUIRED SHUTDOWN WITHIN LIMITS (BD 16)</p> <p>=====</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>A. Required operating mode not reached within TS LCO action statement time (CONTINUED)</p>	<p>1. UNPLANNED LOSS OF MOST OR ALL SAFETY SYSTEM ANNUNCIATION/ INDICATION IN CONTROL ROOM (BD 19)</p> <p>=====</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>A.1 <i>Unplanned</i> loss of > 50% of the following annunciators on one unit for > 15 minutes:</p> <p>Units 1 & 3 1 SA1-9, 14-16, and 18 3 SA1-9, 14-16, and 18</p> <p>Unit 2 2 SA1-9, 14-16</p> <p>AND</p> <p>A.2 Loss of annunciators /indicators requires additional personnel (beyond normal shift complement) to safely operate the unit</p> <p>AND</p> <p>A.3 Significant plant transient in progress</p> <p>OR</p> <p>A.4 Loss of the OAC and ALL PAM indications</p> <p>(END)</p>	<p>1. INABILITY TO MONITOR A SIGNIFICANT TRANSIENT IN PROGRESS (BD 21)</p> <p>=====</p> <p>OPERATING MODE: 1, 2, 3, 4</p> <p>A.1 <i>Unplanned</i> loss of > 50% of the following annunciators on one unit for > 15 minutes:</p> <p>Units 1 & 3 1 SA1-9, 14-16, and 18 3 SA1-9, 14-16, and 18</p> <p>Unit 2 2 SA1-9, 14-16</p> <p>AND</p> <p>A.2 A significant transient is in progress</p> <p>AND</p> <p>A.3 Loss of the OAC and ALL PAM indications</p> <p>AND</p> <p>A.4 <i>Inability to directly monitor</i> any one of the following functions:</p> <ol style="list-style-type: none"> 1. Subcriticality 2. Core Cooling 3. Heat Sink 4. RCS Integrity 5. Containment Integrity 6. RCS Inventory <p>(END)</p>	
INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4	INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4	INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4	INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>4. UNPLANNED LOSS OF ALL ONSITE OR OFFSITE COMMUNICATIONS (BD 17)</p> <p>=====</p> <p>OPERATING MODE: All</p> <p>A. Loss of all onsite communications capability (ROLM system, PA system, Pager system, Onsite Radio system) affecting ability to perform Routine operations</p> <p>B. Loss of all onsite communications capability (Selective Signaling, NRC ETS lines, Offsite Radio System, AT&T line) affecting ability to communicate with offsite authorities.</p> <p>5. FUEL CLAD DEGRADATION (BD 18)</p> <p>=====</p> <p>OPERATING MODE: All:</p> <p>A. DEI - >5μCi/ml</p> <p>(END)</p>			
<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1,2,3,4</p>			

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>1. ANY UNPLANNED RELEASE OF GASEOUS OR LIQUID RADIOACTIVITY TO THE ENVIRONMENT THAT EXCEEDS TWO TIMES THE SLC LIMITS FOR 60 MINUTES OR LONGER (BD 23)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. Valid indication on radiation monitor RIA 33 of $\geq 4.06\text{E}+06$ cpm for > 60 minutes (See Note 1)</p> <p>B. Valid indication on radiation monitor RIA 45 of $\geq 1.33\text{E}+06$ cpm for > 60 minutes (See Note 1)</p> <p>C. Liquid effluent being released exceeds two times SLC 16.11.1 for > 60 minutes as determined by Chemistry Procedure</p> <p>D. Gaseous effluent being released exceeds two times SLC 16.11.2 for > 60 minutes as determined by RP Procedure</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE 1: If monitor reading is sustained for the time period indicated in the EAL AND the required assessments (procedure calculations) cannot be completed within this period, declaration must be made on the valid Radiation Monitor reading.</p> </div> <p style="text-align: center;">(CONTINUED)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>1. ANY UNPLANNED RELEASE OF GASEOUS OR LIQUID RADIOACTIVITY TO THE ENVIRONMENT THAT EXCEEDS 200 TIMES RADIOLOGICAL TECHNICAL SPECIFICATIONS FOR 15 MINUTES OR LONGER (BD 28)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. Valid indication on RIA 46 of $\geq 2.98\text{E}+04$ cpm for >15 minutes (See Note 1)</p> <p>B.1 RIA 33 HIGH Alarm</p> <p>AND</p> <p>B.2 Liquid effluent being released exceeds 200 times the level of SLC 16.11.1 for > 15 minutes as determined by Chemistry Procedure</p> <p>C. Gaseous effluent being released exceeds 200 times the level of SLC 16.11.2 for >15 minutes as determined by RP Procedure</p> <p>2. RELEASE OF RADIOACTIVE MATERIAL OR INCREASES IN RADIATION LEVELS THAT IMPEDES OPERATION OF SYSTEMS REQUIRED TO MAINTAIN SAFE OPERATION OR TO ESTABLISH OR MAINTAIN COLD SHUTDOWN (BD 30)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. Valid radiation reading ≥ 15 mRad/hr in CR, CAS, or, Radwaste CR</p> <p>B. Unplanned/unexpected valid area monitor readings exceed limits stated in Enclosure 4.9</p> <p style="text-align: center;">(CONTINUED)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>1. BOUNDARY DOSE RESULTING FROM ACTUAL/IMMINENT RELEASE OF GASEOUS ACTIVITY (BD 32)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. Valid reading on RIA 46 of $\geq 2.98\text{E}+05$ cpm for >15 minutes (See Note 2)</p> <p>B. Valid reading on RIA 57 or 58 as shown on Enclosure 4.8 (See Note 2)</p> <p>C. Dose calculations result in a dose projection at the site boundary of:</p> <p style="padding-left: 40px;">≥ 100 mRem TEDE or 500 mRem CDE adult thyroid</p> <p>D. Field survey results indicate site boundary dose rates exceeding ≥ 100 mRad/hr expected to continue for more than one hour</p> <p>OR</p> <p>D.1 Analyses of field survey samples indicate adult thyroid dose commitment of ≥ 500 mRem CDE (3.84E^{-7} $\mu\text{Ci}/\text{ml}$) for one hour of inhalation</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE 2: If actual Dose Assessment cannot be completed within 15 minutes, then the valid radiation monitor reading should be used for emergency classification.</p> </div> <p style="text-align: center;">(CONTINUED)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>1. BOUNDARY DOSE RESULTING FROM ACTUAL/IMMINENT RELEASE OF GASEOUS ACTIVITY (BD 36)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. Valid reading on RIA 46 of $\geq 2.98\text{E}+06$ cpm for ≥ 15 minutes (See Note 3)</p> <p>B. Valid reading on RIA 57 or 58 as shown on Enclosure 4.8 (See Note 3)</p> <p>C. Dose calculations result in a dose projection at the site boundary of:</p> <p style="padding-left: 40px;">C.1 ≥ 1000 mRem TEDE</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">C.2 ≥ 5000 mRem CDE adult thyroid</p> <p>D. Field survey results indicate site boundary dose rates exceeding ≥ 1000 mRad/hr expected to continue for more than one hour</p> <p>OR</p> <p>D.1 Analyses of field survey samples indicate adult thyroid dose commitment of ≥ 5000 mRem CDE for one hour of inhalation</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE 3: If actual Dose Assessment cannot be completed within 15 minutes, then the valid radiation monitor reading should be used for emergency classification.</p> </div> <p style="text-align: center;">(END)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>

Assumptions used for calculation of vent monitors RIA 45 & 46:

1. Average annual meteorology ($1.672 \text{E}-6 \text{ sec}/\text{m}^3$), semi-elevated
2. Vent flow rate 65,000 cfm (average daily flow rate)
3. No credit is taken for vent filtration
4. One hour release duration for Unusual Event, 15 minute duration for Alert, Site Area Emergency, General Emergency
5. General Emergency PAGs are 1 rem TEDE and 5 rem CDE; Site Area Emergency determination is based on 10% of the General Emergency PAGs
6. Calculations for monitor readings are based on whole body dose
7. Standard ODCM guidance together with NUMARC guidance indicates that effluent releases are based on Technical Specification releases

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>2. UNEXPECTED INCREASE IN PLANT RADIATION OR AIRBORNE CONCENTRATION (BD 25)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. LT 5 reading 14" and decreasing with makeup not keeping up with leakage <u>WITH</u> fuel in the core</p> <p>B. <i>Uncontrolled</i> water level decrease in the SFP and fuel transfer canal with all irradiated fuel assemblies remaining covered by water</p> <p>C. 1 R/hr radiation reading at one foot away from a damaged storage cask located at the ISFSI</p> <p>D. <i>Valid</i> area monitor readings exceeds limits stated in Enclosure 4.9.</p> <p style="text-align: center;">(END)</p>	<p>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 (BD 31)</p> <hr/> <p>OPERATING MODE: All</p> <p>A. <i>Valid</i> RIA 3, 6, 41, OR 49 HIGH Alarm</p> <p>B. HIGH Alarm for portable area monitors on the main bridge or SFP bridge</p> <p>C. Report of visual observation of irradiated fuel uncovered</p> <p>D. Operators determine water level drop in either the SFP or fuel transfer canal will exceed makeup capacity such that irradiated fuel will be uncovered</p> <p style="text-align: center;">(END)</p>	<p>2. LOSS OF WATER LEVEL IN THE REACTOR VESSEL THAT HAS OR WILL UNCOVER FUEL IN THE REACTOR VESSEL (BD 35)</p> <hr/> <p>OPERATING MODE: 5, 6</p> <p>A.1 Failure of heat sink causes loss of Cold Shutdown condition</p> <p>AND</p> <p>A.2 LT 5 indicates 0 inches after initiation of RCS makeup</p> <p>B.1 Failure of heat sink causes loss of Cold Shutdown condition</p> <p>AND</p> <p>B.2 Either train ultrasonic level indication less than 0 inches and decreasing after initiation of RCS makeup</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>NOTE: This Initiating Condition is also located in Enclosure 4.4., (Loss of Shutdown Functions). High radiation levels will also be seen with this condition.</p> </div> <p style="text-align: center;">(END)</p>	
<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	

Enclosure 4.4
Loss of Shutdown Functions

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UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
	<p>1. FAILURE OF RPS TO COMPLETE OR INITIATE A Rx SCRAM (BD 39)</p> <hr/> <p align="center">OPERATING MODE: 1, 2, 3</p> <p>A.1 <i>Valid</i> reactor trip signal received or required WITHOUT automatic scram</p> <p>AND</p> <p>A.1.1 DSS has inserted Control Rod Groups 5, 6, 7</p> <p>OR</p> <p>A.1.2 Manual trip from the Control Room is successful and reactor power is less than 5% and decreasing</p> <p>2. INABILITY TO MAINTAIN PLANT IN COLD SHUTDOWN (BD 41)</p> <hr/> <p align="center">OPERATING MODE: 5, 6</p> <p>A.1 Loss of LPI and/or LPSW</p> <p>AND</p> <p>A.2 Inability to maintain RCS temperature below 200° F as indicated by either of the following:</p> <p>A.2.1 RCS temperature at the LPI Pump Suction</p> <p>OR</p> <p>A.2.2 Average of the 5 highest CETCs as indicated by ICCM display</p> <p>OR</p> <p>A.2.3 Visual observation (END)</p>	<p>1. FAILURE OF RPS TO COMPLETE OR INITIATE A Rx SCRAM (BD 42)</p> <hr/> <p align="center">OPERATING MODE: 1, 2</p> <p>A.1 <i>Valid</i> reactor trip signal received or required WITHOUT automatic scram</p> <p>AND</p> <p>A.2 DSS has NOT inserted Control Rod Groups 5, 6, 7</p> <p>AND</p> <p>A.3 Manual trip from the Control Room was NOT successful in reducing reactor power to less than 5% and decreasing</p> <p>2. COMPLETE LOSS OF FUNCTION NEEDED TO ACHIEVE OR MAINTAIN HOT SHUTDOWN (BD 43)</p> <hr/> <p align="center">OPERATING MODE: 1, 2, 3, 4</p> <p>A. Average of the 5 highest CETCs $\geq 1200^{\circ}$ F shown on ICCM</p> <p>B. Unable to maintain reactor subcritical</p> <p>C. SSF feeding SG per EOP</p> <p align="center">(CONTINUED)</p>	<p>1. FAILURE OF RPS TO COMPLETE AUTOMATIC SCRAM AND MANUAL SCRAM NOT SUCCESSFUL WITH INDICATION OF CORE DAMAGE (BD 45)</p> <hr/> <p align="center">OPERATING MODE: 1, 2</p> <p>A.1 <i>Valid</i> Rx trip signal received or required WITHOUT automatic scram</p> <p>AND</p> <p>A.2 Manual trip from the Control Room was NOT successful in reducing reactor power to $< 5\%$ and decreasing</p> <p>AND</p> <p>A.3 Average of the 5 highest CETCs $\geq 1200^{\circ}$ F on ICCM</p> <p align="center">(END)</p>
	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>

Enclosure 4.4
Loss of Shutdown Functions

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UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
		<p>3. LOSS OF WATER LEVEL IN THE REACTOR VESSEL THAT HAS OR WILL UNCOVER FUEL IN THE REACTOR VESSEL (BD 44)</p> <hr/> <p><u>OPERATING MODE:</u> 5, 6</p> <p>A.1 Failure of heat sink causes loss of Cold Shutdown conditions</p> <p><u>AND</u></p> <p>A.2 LT-5 indicates 0 inches after initiation of RCS Makeup</p> <p>B.1 Failure of heat sink causes loss of Cold Shutdown conditions</p> <p><u>AND</u></p> <p>B.2 Either train ultrasonic level indication less than 0 inches and decreasing after initiation of RCS makeup</p> <p align="center">(END)</p>	
		<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>	

Enclosure 4.5
Loss of Power

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UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>1. LOSS OF ALL OFFSITE POWER TO ESSENTIAL BUSES FOR GREATER THAN 15 MINUTES (BD 47)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A.1 Loss of all offsite AC power to both the Red and Yellow Buses for > 15 minutes</p> <p><u>AND</u></p> <p>A.2 Unit auxiliaries are being supplied from Keowee or CT5</p> <p>2. UNPLANNED LOSS OF REQUIRED DC POWER FOR GREATER THAN 15 MINUTES (BD 48)</p> <hr/> <p><u>OPERATING MODE:</u> 5, 6</p> <p>A.1 <i>Unplanned</i> loss of vital DC power to required DC busses as indicated by bus voltage less than 110 VDC</p> <p><u>AND</u></p> <p>A.2 Failure to restore power to at least one required DC bus within 15 minutes from the time of loss</p> <p align="center">(END)</p>	<p>1. LOSS OF ALL OFFSITE AC POWER AND LOSS OF ALL ONSITE AC POWER TO ESSENTIAL BUSES (BD 49)</p> <hr/> <p><u>OPERATING MODE:</u> 5, 6 Defueled</p> <p>A.1 MFB 1 and 2 de-energized</p> <p><u>AND</u></p> <p>A.2 Failure to restore power to at least one MFB within 15 minutes from the time of loss of both offsite and onsite AC power</p> <p>2. AC POWER CAPABILITY TO ESSENTIAL BUSES REDUCED TO A SINGLE SOURCE FOR GREATER THAN 15 MINUTES (BD 50)</p> <hr/> <p><u>OPERATING MODE:</u> 1, 2, 3, 4</p> <p>A. AC power capability has been degraded to a single power source for > 15 minutes due to the loss of all but one of:</p> <p align="center">Unit Normal Transformer Unit SU Transformer Another Unit SU Transformer CT4 CT5</p> <p align="center">(END)</p>	<p>1. LOSS OF ALL OFFSITE AC POWER AND LOSS OF ALL ONSITE AC POWER TO ESSENTIAL BUSES (BD 51)</p> <hr/> <p><u>OPERATING MODE:</u> 1, 2, 3, 4</p> <p>A.1 MFB 1 and 2 de-energized</p> <p><u>AND</u></p> <p>A.2 Failure to restore power to at least one MFB within 15 minutes from the time of loss of both offsite and onsite AC power</p> <p>2. LOSS OF ALL VITAL DC POWER (BD 52)</p> <hr/> <p><u>OPERATING MODE:</u> 1, 2, 3, 4</p> <p>A.1 <i>Unplanned</i> loss of vital DC power to required DC busses as indicated by bus voltage less than 110 VDC</p> <p><u>AND</u></p> <p>A.2 Failure to restore power to at least one required DC bus within 15 minutes from the time of loss</p> <p align="center">(END)</p>	<p>1. PROLONGED LOSS OF ALL OFFSITE POWER AND ONSITE AC POWER (BD 54)</p> <hr/> <p><u>OPERATING MODE:</u> 1, 2, 3, 4</p> <p>A.1 MFB 1 and 2 de-energized</p> <p><u>AND</u></p> <p>A.2 SSF fails to maintain Hot Shutdown</p> <p><u>AND</u></p> <p>A.3 At least one of the following conditions exist:</p> <p>A.3.1 Restoration of power to at least one MFB within 4 hours is <u>NOT</u> likely</p> <p align="center"><u>OR</u></p> <p>A.3.2 Indications of continuing degradation of core cooling based on Fission Product Barrier monitoring</p> <p align="center">(END)</p>
<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>1. FIRES/EXPLOSIONS WITHIN THE PLANT (BD 57)</p> <hr/> <p style="text-align: center;"><u>OPERATING MODE:</u> All</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: Within the plant means Turbine Building, Auxiliary Building, Reactor Building, Keowee Hydro.</p> </div> <p>A. Fire within the plant not extinguished within 15 minutes of Control Room notification or verification of a Control Room alarm</p> <p>B. Unanticipated explosion within the plant resulting in <i>visible damage</i> to permanent structures/equipment</p> <p>2. CONFIRMED SECURITY THREAT INDICATES POTENTIAL DEGRADATION IN THE LEVEL OF SAFETY OF PLANT (BD 58)</p> <hr/> <p style="text-align: center;"><u>OPERATING MODE:</u> All</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: RP/0/B/1000/007, (Security Event), shall be used in conjunction with all security related emergency classifications.</p> </div> <p>A. Discovery of <i>bomb</i> within plant <i>protected area</i> and outside security vital areas</p> <p>B. <i>Hostage/Extortion</i> situation</p> <p>C. <i>Violent</i> civil disturbance within the owner controlled area</p> <p>D. Credible Security threat to the site (END)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>1. FIRE/EXPLOSION AFFECTING OPERABILITY OF PLANT SAFETY SYSTEMS REQUIRED TO ESTABLISH/MAINTAIN SAFE SHUTDOWN (BD 59)</p> <hr/> <p style="text-align: center;"><u>OPERATING MODE:</u> All</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: Only one train of a system needs to be affected or damaged in order to satisfy this condition.</p> </div> <p>A.1 <i>Fire/explosions</i></p> <p><u>AND</u></p> <p>A.1.1 Affected safety-related system parameter indications show degraded performance</p> <p><u>OR</u></p> <p>A.1.2 Plant personnel report <i>visible damage</i> to permanent structures or equipment required for safe shutdown</p> <p>2 SECURITY EVENT IN A PLANT PROTECTED AREA (BD 60)</p> <hr/> <p style="text-align: center;"><u>OPERATING MODE:</u> All</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: RP/0/B/1000/007, (Security Event), shall be used in conjunction with all security related emergency classifications.</p> </div> <p>A. <i>Intrusion</i> into plant <i>protected area</i> by a hostile force</p> <p>B. <i>Bomb</i> discovered in an area containing safety related equipment</p> <p style="text-align: center;">(END)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY. NOTIFY 1, 2, 3, 4</p>	<p>1. SECURITY EVENT IN A PLANT VITAL AREA (BD 61)</p> <hr/> <p style="text-align: center;"><u>OPERATING MODE:</u> All</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: RP/0/B/1000/007, (Security Event), shall be used in conjunction with all security related emergency classifications</p> </div> <p>A. <i>Intrusion</i> into any of the following plant areas by a hostile force: Reactor Building Auxiliary Building Keowee Hydro</p> <p>B. <i>Bomb</i> detonated in any of the following areas:</p> <ul style="list-style-type: none"> • Keowee Hydro • Keowee Dam • ISFSI • Reactor Building • Auxiliary Building • SSF <p style="text-align: center;">(END)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>1. SECURITY EVENT RESULTING IN LOSS OF ABILITY TO REACH AND MAINTAIN COLD SHUTDOWN (BD 62)</p> <hr/> <p style="text-align: center;"><u>OPERATING MODE:</u> All</p> <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>NOTE: RP/0/B/1000/007, (Security Event), shall be used in conjunction with all security related emergency classifications</p> </div> <p>A. Loss of physical control of the control room due to security event</p> <p>B. Loss of physical control of the Aux Shutdown panel and the SSF due to a Security Event</p> <p style="text-align: center;">(END)</p> <p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>1. NATURAL AND DESTRUCTIVE PHENOMENA AFFECTING THE PROTECTED AREA (BD 64)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Tremor felt and <i>valid</i> alarm on the strong motion accelerometer</p> <p>B. Tornado striking within <i>Protected Area</i> Boundary</p> <p>C. Vehicle crash into plant structures/systems within the <i>Protected Area</i> Boundary</p> <p>D. Turbine failure resulting in casing penetration or damage to turbine or generator seals</p> <p style="text-align: center;">(CONTINUED)</p>	<p>1. NATURAL AND DESTRUCTIVE PHENOMENA AFFECTING THE PLANT VITAL AREA (BD 69)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Tremor felt and seismic trigger actuates (0.05g)</p> <p>B.1 Tornado, high winds, missiles resulting from turbine failure, vehicle crashes, or other catastrophic event</p> <p><u>AND</u></p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>NOTE: Only one train of a safety-related system needs to be affected or damaged in order to satisfy these conditions.</p> </div> <p>B.1.1 <i>Visible damage</i> to permanent structures or equipment required for safe shutdown of the unit</p> <p><u>OR</u></p> <p>B.1.2 Affected safety system parameter indications show degraded performance</p> <p>2. RELEASE OF TOXIC/FLAMMABLE GASES JEOPARDIZING SYSTEMS REQUIRED TO MAINTAIN SAFE OPERATION OR ESTABLISH MAINTAIN COLD SHUTDOWN (BD 71)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Report/detection of <i>toxic gases</i> in concentrations that will be life-threatening to plant personnel</p> <p>B. Report/detection of flammable gases in concentrations that will affect the safe operation of the plant:</p> <ul style="list-style-type: none"> • Reactor Building • Auxiliary Building • Turbine Building • Control Room <p style="text-align: center;">(CONTINUED)</p>	<p>1. CONTROL ROOM EVACUATION AND PLANT CONTROL CANNOT BE ESTABLISHED (BD 75)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A.1 Control Room evacuation has been initiated</p> <p><u>AND</u></p> <p>A.2 Control of the plant cannot be established from the Aux Shutdown Panel or the SSF within 15 minutes</p> <p>2. KEOWEE HYDRO DAM FAILURE (BD 76)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Imminent/actual dam failure includes any of the following:</p> <ul style="list-style-type: none"> • Keowee Hydro Dam • Little River Dam • Dikes A, B, C, or D • Intake Canal Dike <p>3. OTHER CONDITIONS WARRANT DECLARATION OF SITE AREA EMERGENCY (BD 77)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Emergency Coordinator/EOF Director judgment</p> <p style="text-align: center;">(END)</p>	<p>1. OTHER CONDITIONS WARRANT DECLARATION OF GENERAL EMERGENCY (BD 78)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A.1 Emergency Coordinator/EOF Director judgment indicates:</p> <p>A.1.1 Actual/imminent substantial core degradation with potential for loss of containment</p> <p><u>OR</u></p> <p>A.1.2 Potential for <i>uncontrolled</i> radionuclide releases that would result in a dose projection at the site boundary greater than 1000 mRem TEDE or 5000 mRem CDE Adult Thyroid</p> <p style="text-align: center;">(END)</p>
INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4	INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4	INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4	INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4

Enc 4.7
Natural Disasters, Hazards and Other Conditions Affecting Plant Safety

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UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>2. NATURAL AND DESTRUCTIVE PHENOMENA AFFECTING KEOWEE HYDRO (BD 66)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Reservoir elevation \geq 807 feet with all spillway gates open and the lake elevation continues to rise</p> <p>B. Seepage readings increase or decrease greatly or seepage water is carrying a significant amount of soil particles</p> <p>C. New area of seepage or wetness, with large amounts of seepage water observed on dam, dam toe, or the abutments</p> <p>D. Slide or other movement of the dam or abutments which could develop into a failure</p> <p>E. Developing failure involving the powerhouse or appurtenant structures and the operator believes the safety of the structure is questionable</p> <p>3. RELEASE OF TOXIC OR FLAMMABLE GASES DEEMED DETRIMENTAL TO SAFE OPERATION OF THE PLANT (BD 67)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Report/detection of toxic or flammable gases that could enter within the site area boundary in amounts that can affect normal operation of the plant</p> <p>B. Report by local, county, state officials for potential evacuation of site personnel based on offsite event</p> <p style="text-align: center;">(CONTINUED)</p>	<p>3. TURBINE BUILDING FLOOD (BD 72)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Turbine Building flood requiring use of AP/1,2,3/A/1700/10, (<i>Uncontrolled Flooding Of Turbine Building</i>)</p> <p>4. CONTROL ROOM EVACUATION HAS BEEN INITIATED (BD 73)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A.1 Evacuation of Control Room</p> <p><u>AND ONE OF THE FOLLOWING:</u></p> <p><u>AND</u></p> <p>A.1.1 Plant control IS established from the Aux shutdown Panel or the SSF</p> <p><u>OR</u></p> <p>A.1.2 Plant control IS BEING established from the Aux Shutdown Panel or SSF</p> <p>5. OTHER CONDITIONS WARRANT CLASSIFICATION OF AN ALERT (BD 74)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A.1 Emergency Coordinator judgment indicates that:</p> <p>A.1.1 Plant safety may be degraded</p> <p><u>AND</u></p> <p>A.1.2 Increased monitoring of plant functions is warranted</p> <p style="text-align: center;">(END)</p>		
<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>	<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY NOTIFY 1, 2, 3, 4</p>

UNUSUAL EVENT	ALERT	SITE AREA EMERGENCY	GENERAL EMERGENCY
<p>4 OTHER CONDITIONS EXIST WHICH WARRANT DECLARATION OF AN UNUSUAL EVENT (BD 68)</p> <hr/> <p><u>OPERATING MODE:</u> All</p> <p>A. Emergency Coordinator determines potential degradation of level of safety has occurred</p> <p style="text-align: center;">(END)</p>			
<p>INITIAL NOTIFICATION REQUIREMENTS: SEE EMERGENCY TELEPHONE DIRECTORY</p> <p>NOTIFY 1, 2, 3, 4</p>			

Radiation Monitor Readings for Emergency Classification

NOTE: IF Actual Dose Assessment **cannot be** completed within 15 minutes.
THEN The *valid* monitor reading should be used for Emergency Classification.

All RIA values are considered GREATER THAN or EQUAL TO

HOURS SINCE REACTOR TRIPPED	RIA 57 R/hr		RIA 58 R/hr*	
	Site Area Emergency	General Emergency	Site Area Emergency	General Emergency
0.0 - < 0.5	5.9E+003	5.9E+004	2.6E+003	2.6E+004
0.5 - < 1.0	2.6E+003	2.6E+004	1.1E+003	1.1E+004
1.0 - < 1.5	1.9E+003	1.9E+004	8.6E+002	8.6E+003
1.5 - < 2.0	1.9E+003	1.9E+004	8.5E+002	8.5E+003
2.0 - < 2.5	1.4E+003	1.4E+004	6.3E+002	6.3E+003
2.5 - < 3.0	1.2E+003	1.2E+004	5.7E+002	5.7E+003
3.0 - < 3.5	1.1E+003	1.1E+004	5.2E+002	5.2E+003
3.5 - < 4.0	1.0E+003	1.0E+004	4.8E+002	4.8E+003
4.0 - < 8.0	1.0E+003	1.0E+004	4.4E+002	4.4E+003

* RIA 58 is partially shielded

Assumptions used for calculation of high range in-containment monitors RIA 57 and 58:

1. Average annual meteorology ($7.308 \text{ E}^{-6} \text{ sec/m}^3$)
2. Design basis leakage ($5.6 \text{ E}^6 \text{ ml/hr}$)
3. One hour release duration
4. *General Emergency* PAGs are 1 rem TEDE and 5 rem CDE; *Site Area Emergency* determination is based on 10% of the *General Emergency* PAGs
5. Calculations for monitor readings are based on CDE because thyroid dose is limiting
6. No credit is taken for filtration
7. LOCA conditions are limiting and provide the more conservative reading

Unexpected/Unplanned Increase In Area Monitor Readings

NOTE: This Initiating Condition is not intended to apply to anticipated temporary increases due to planned events (e.g.; incore detector movement, radwaste container movement, depleted resin transfers, etc.).

MONITOR NUMBER	UNITS 1, 2, 3	
	UNUSUAL EVENT 1000x NORMAL LEVELS mRAD/HR	ALERT mRAD/HR
RIA 7, Hot Machine Shop Elevation 796	150	≥ 5000
RIA 8, Hot Chemistry Lab Elevation 796	4200	≥ 5000
RIA 10, Primary Sample Hood Elevation 796	830	≥ 5000
RIA 11, Change Room Elevation 796	210	≥ 5000
RIA 12, Chem Mix Tank Elevation 783	800	≥ 5000
RIA 13, Waste Disposal Sink Elevation 771	650	≥ 5000
RIA 15, HPI Room Elevation 758	NOTE*	≥ 5000

NOTE: RIA 15 normal readings are approximately 9 mRad/hr on a daily basis. Applying 1000x normal readings would put this monitor greater than 5000 mRad/hr just for an *Unusual Event*. For this reason, an *Unusual Event* will **NOT** be declared for a reading less than 5000 mRad/hr.

1. List of Definitions and Acronyms

NOTE: Definitions are italicized throughout procedure for easy recognition.

- 1.1 **ALERT** - Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.
- 1.2 **BOMB** - A fused explosive device
- 1.3 **CONDITION A** - Failure is Imminent or Has Occurred - A failure at the dam has occurred or is about to occur and minutes to days may be allowed to respond dependent upon the proximity to the dam.
- 1.4 **CONDITION B** - Potentially Hazardous Situation is Developing - A situation where failure may develop, but preplanned actions taken during certain events (such as major floods, earthquakes, evidence of piping) may prevent or mitigate failure.
- 1.5 **CIVIL DISTURBANCE** - A group of ten (10) or more people *violently* protesting station operations or activities at the site.
- 1.6 **CREDIBLE THREAT** - The determination of what is a credible threat to the site will be the responsibility of Security Manager/designee in consultation with the OSM. The determination of "credible" is made through use of information found in the Oconee Nuclear Station Safeguards Contingency Plan and Security implementing procedures.
- 1.7 **EXPLOSION** - A rapid, *violent*, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures, systems, or components. A sudden failure of a pressurized pipe/line could fit this definition. This definition includes MS line rupture and FW line ruptures.
- 1.8 **EXTORTION** - An attempt to cause an action at the station by threat of force.
- 1.9 **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.
- 1.10 **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. Releases can be reasonably expected to exceed EPA Protective Action Guidelines exposure levels outside the Exclusion Area Boundary.

- 1.11 **HOSTAGE** - A person or object held as leverage against the station to ensure demands will be met by the station.
- 1.12 **INTRUSION/INTRUDER** - Suspected hostile individual present in a *Protected Area* without authorization.
- 1.13 **INABILITY TO DIRECTLY MONITOR** - Operational Aid Computer data points are unavailable or gauges/panel indications are NOT readily available to the operator.
- 1.14 **LOSS OF POWER** - Emergency Action Levels (EALs) apply to the ability of electrical energy to perform its intended function, reach its intended equipment. Ex. - If both MFBs, are energized but all 4160v switchgear is not available, the electrical energy can not reach the motors intended. The result to the plant is the same as if both MFBs were de-energized.
- 1.15 **PROTECTED AREA** - Encompasses all Owner Controlled Areas within the security perimeter fence.
- 1.16 **REACTOR COOLANT SYSTEM (RCS) LEAKAGE** - RCS Operational Leakage as defined in the Technical Specification Basis B 3.4.13.
- 1.17 **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.
- 1.18 **SABOTAGE** - Deliberate damage, mis-alignment, or mis-operation of plant equipment with the intent to render the equipment unavailable.
- 1.19 **SAFETY-RELATED SYSTEMS AREA** - Any area within the *Protected area* which contains equipment, systems, components, or material, the failure, destruction, or release of which could directly or indirectly endanger the public health and safety by exposure to radiation.
- 1.20 **SIGNIFICANT 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 System Activation
- 1.21 **SITE AREA EMERGENCY** - Events are in process or have occurred which involve actual or likely major failures of plant functions needed for the protection of the public. Any releases are NOT expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels outside the Exclusion Area Boundary.
- 1.22 **SELECTED LICENSEE COMMITMENT (SLC)** - Chapter 16 of the FSAR

- 1.23 **SITE BOUNDARY** - That area, including the *Protected Area*, in which DPC has the authority to control all activities including exclusion or removal of personnel and property (1 mile radius from the center of Unit 2).

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

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

- 1.26 **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.

- 1.27 **UNUSUAL EVENT** - Events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

- 1.28 **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 with this definition is the need for timely assessment.

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

- 1.30 **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 safety structure, system, or component. Example damage: deformation due to heat or impact, denting, penetration, rupture.

Enclosure 4.11
Operating Modes Defined In Improved
Technical Specifications

RP/0/B/1000/001

Page 1 of 1

MODES

MODE	TITLE	REACTIVITY CONDITION (K_{eff})	% RATED THERMAL POWER (a)	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 250
4	Hot Shutdown (b)	< 0.99	NA	$250 > T > 200$
5	Cold Shutdown (b)	< 0.99	NA	≤ 200
6	Refueling (c)	NA	NA	NA

(a) Excluding decay heat.

(b) All reactor vessel head closure bolts fully tensioned.

(c) One or more reactor vessel head closure bolts less than fully tensioned.

1. Instructions For Using Enclosure 4.1 – Fission Product Barrier Matrix

- 1.1 If the unit was at Hot S/D or above, (Modes 1, 2, 3, or 4) and one or more fission product barriers have been affected, refer to Enclosure 4.1, (Fission Product Barrier Matrix) and review the criteria listed to determine if the event should be classified.

- 1.1.1 For each Fission Product Barrier, review the associated EALs to determine if there is a Loss or Potential Loss of that barrier. Circle any that apply.

NOTE: An event with multiple events could occur which would result in the conclusion that exceeding the loss or potential loss thresholds is imminent (i.e. within 1-3 hours). In this situation, use judgement and classify as if the thresholds are exceeded.

- 1.2 Three possible outcomes exist for each barrier. No challenge, potential loss, or loss. Use the worst case for each barrier and the classification table at the bottom of the page to determine appropriate classification.
- 1.3 The numbers in parentheses out beside the label for each column can be used to assist in determining the classification. If no EAL is met for a given barrier, that barrier will have 0 points. The points for the columns are as follows:

<u>Barrier</u>	<u>Failure</u>	<u>Points</u>
RCS	Potential Loss	4
	Loss	5
Fuel Clad	Potential Loss	4
	Loss	5
Containment	Potential Loss	1
	Loss	3

- 1.3.1 To determine the classification, add the highest point value for each barrier to determine a total for all barriers. Compare this total point value with the numbers in parentheses beside each classification to see which one applies.
- 1.3.2 Finally as a verification of your decision, look below the Emergency Classification you selected. The loss and/or potential loss EALs selected for each barrier should be described by one of the bullet statements.

Instructions For Using Enclosure 4.1

EXAMPLE: Failure to properly isolate a 'B' MS Line Rupture outside containment, results in extremely severe overcooling.

PTS entry conditions were satisfied.

Stresses on the 'B' S/G resulted in failure of multiple S/G tubes.

RCS leakage through the S/G exceeds available makeup capacity as indicated by loss of subcooling margin.

Barrier	EAL	Failure	Points
RCS	SGTR > Makeup capacity of one HPI pump in normal makeup mode with letdown isolated	Potential Loss	4
	Entry into PTS operating range	Potential Loss	4
	RCS leak rate > available makeup capacity as indicated by a loss of subcooling	Loss	5
Fuel Clad	No EALs met and no justification for classification on judgment	No Challenge	0
Containment	Failure of secondary side of SG results in a direct opening to the environment	Loss	3

RCS 5 + Fuel 0 + Containment 3 = Total 8

- A. Even though two Potential Loss EALs and one Loss EAL are met for the RCS barrier, credit is only taken for the worst case (highest point value) EAL, so the points from this barrier equal 5.
- B. No EAL is satisfied for the Fuel Clad Barrier so the points for this barrier equal 0.
- C. One Loss EAL is met for the Containment Barrier so the points for this barrier equal 3.
- D. When the total points are calculated the result is 8, therefore the classification would be a *Site Area Emergency*.
- E. Look in the box below "*Site Area Emergency*". You have identified a loss of two barriers. This agrees with one of the bullet statements. The classification is correct.

INFORMATION ONLY

ONS Human Resources Procedure

Approved: Anthony Rose

Approval Date: 1-7-02

ONS Human Resources Emergency Plan

1.0 PURPOSE

The purpose of this procedure is to delineate the role that the Oconee HR Group fulfills in support of the ONS Emergency Plan.

NOTE: The Emergency Preparedness Section must review revisions to this procedure and receive a control copy within seven (7) working days of approval.

2.0 APPLICABILITY

This procedure applies to the Oconee Human Resources (OHR) Group (i.e., Core HR, Medical) and applicable vendor/contract personnel.

3.0 DESCRIPTION

This procedure broadly defines the role of the Oconee Human Resource (OHR) Group during an emergency/drill. Each HR section shall develop a mechanism to fulfill requirements identified by this procedure (e.g., training/guidelines/procedure). Additional implementation guidance may be included as part of other documents (e.g., Response Procedures, Site Directives).

The guidance in this procedure shall not prevent any member of the HR group from taking actions deemed necessary to contend with urgent circumstances.

4.0 **PROCEDURE**

4.1 **ACCOUNTABILITY of PERSONNEL**

All HR personnel shall assemble at their designated assembly location.

Core HR personnel who are **inside** the protected area during a site assembly and whose designated assembly point is **inside** the protected area, should:

1. proceed to designated assembly point,
2. swipe security badge at the nearest security badge card reader (badge reader locations can be found in NSD-114),
3. notify designated site assembly contact person within 10 minutes, and
4. remain at designated assembly location and await further instructions.

Core HR personnel who are **inside** the protected area during a site assembly and whose designated assembly point is **outside** the protected area, should:

1. exit the protected area,
2. proceed to the HR Manager's office,
3. notify designated site assembly contact person within 10 minutes,
4. remain in the HR Manager's office and await further instructions.

Core HR personnel (non-ERO) who are **outside** the protected area during a site assembly and whose designated assembly point is **inside** the protected area, should:

1. notify designated site assembly contact person within 10 minutes,
2. remain where they are and await further instructions.

(Note: ERO personnel will respond according to their ERO responsibilities.)

Core HR personnel who are **outside** the protected area during a site assembly and whose designated assembly point is **outside** the protected area, should:

1. proceed to designated site assembly point
2. notify designated site assembly contact person within 10 minutes, and
3. remain at designated assembly location and await further instructions.

Personnel shall remain at their assembly locations until released by the Emergency Coordinator/designee. In the event special instructions are necessary (e.g., site evacuation), information will be provided through the TSC/supervisory process at assembly locations.

4.1.1 Site Assembly - Normal Work Hours (Monday - Thursday)

Designated site assembly contacts (reference Enclosure 5.1) shall be responsible for ensuring that their section accountability status is reported per the following:

- 1) Medical personnel should report accountability to Core HR Site Assembly Contact within 10 minutes.
- 2) Core HR Site Assembly Contact should report accountability for **both** Core HR and Medical to extension 5050 within 15 minutes. Site assembly contact is responsible for following the instructions given on the phone mail message when extension 5050 is called.

4.1.2 Site Assembly - Backshifts, Weekends, and Holidays

If present, the supervisor/designee shall report accountability status for their employees to extension 5050 within 15 minutes, and await further instructions.

If a supervisor/designee is not present, each individual is responsible for calling extension 5050 to report their accountability status.

Site assembly contacts are responsible for following the instructions given on the phone mail message when extension 5050 is called.

4.2 TECHNICAL/OPERATIONAL SUPPORT CENTER (TSC/OSC)

4.2.1 Locations

a. Primary

- TSC: Unit 1&2 Control Room
- OSC: Unit 3 Control Room

b. Alternate

- TSC: Oconee Office Building Room 316
- OSC: Oconee Office Building Room 316A

4.2.2 Staffing

4.2.2.1 Technical Support Center

No routine staffing requirements exist for Oconee Human Resource (OHR) personnel in the Technical Support Center. However, circumstances may dictate that OHR personnel fulfill certain roles/duties within the TSC (as required by the Emergency Coordinator/designee).

4.2.3 Notification of Activation

a. Normal Work Hours

Notification of TSC/OSC/EOF activation will normally occur over the site public address system. Designated TSC/OSC/EOF personnel shall respond as required.

b. Off-Normal Work Hours

During backshift, weekends, and holidays TSC/OSC/EOF response personnel shall be notified as described in their applicable section procedures and guidelines. Fitness for Duty (FFD) considerations are applicable for TSC/OSC/EOF call-outs.

4.3 CONTROL of SITE INGRESS/EGRESS

During a Site Assembly/Event, Security personnel shall be responsible for:

1. controlling site owner controlled area access via electronic/mechanical access control systems or by posting of security personnel, and
2. assisting in the orderly evacuation of personnel from the site as necessary.

4.4 SITE EVACUATION or RELOCATION

The position of Human Resource Group Evacuation Coordinator is fulfilled by designated OHR Managers as listed in Enclosure 5.1. The Oconee HR Manager will oversee the following actions once an evacuation is announced over the PA System:

- (1) determine essential personnel who should remain on-site,
- (2) provide continuous (24 hour) coverage for essential functions,
- (3) convey preliminary evacuation instructions to each OHR Section Manager/Assembly Point Contact; and
- (4) coordinate evacuation/relocation of OHR personnel.

Evacuation/relocation instructions will be provided to assembly point contacts by the OHR Group Evacuation Coordinator. Evacuation instructions may also be provided to site personnel: (1) over the Site public address system by the Emergency Coordinator/designee; and (2) on-line using the "Evacuation Plan" icon (shown below) located in the Oconee Information Library".



← Evacuation Plan icon is located in the Oconee Information Library

4.5 DRILL TEAM SCENARIO TEAM REPRESENTATIVES

As needed, support from Human Resource Personnel may be necessary to assist in scenario development/drills.

5.0 ENCLOSURES

Enclosure 5.1 - "OHR Site Assembly Contacts and Group Evacuation Coordinators"

OHR Site Assembly Contacts and Group Evacuation Coordinators

- **SITE ASSEMBLY SECTION CONTACTS**

Core Human Resources (HR).....Human Resource Personnel
Medical Personnel

- ♦ **Primary Contact**.....Gail Porter (4135)
- ♦ **Alternate Contact**.....Donna Hellams (3366)

(Note: This person is responsible for reporting **both** Core HR and Medical accountability to extension 5050.)

- **HR GROUP EVACUATION COORDINATORS**

- ♦ **Primary Contact**.....Gail Porter (4135)
- ♦ **Alternate Contact**.....Don Karns (4070)