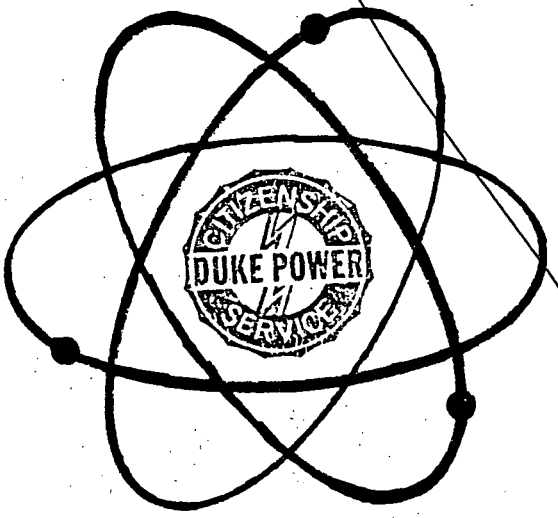
# DUKE POWER COMPANY

# OCONEE NUCLEAR STATION

# EMERGENCY PLAN IMPLEMENTING PROCEDURES




APPROVED:

M S Tuckman

M. S. Tuckman, Station Manager

5/12/87

Date Approved

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TABLE OF CONTENTS

Form 34731 (R9-86)

CONTROL COPY

RP/O/B/1000/01

DUKE POWER COMPANY

PROCEDURE PROCESS RECORD

INFORMATION ONLY

(1) ID No. _____ Change(s) 0 to 0 Incorporated

PREPARATION

(2) STATION Oconee Nuclear Station

(3) PROCEDURE TITLE Emergency Classification

(4) PREPARED BY Coleman C. Jennings DATE 12/8/86

(5) REVIEWED BY Fred Owens DATE 12-9-86

Cross-Disciplinary Review By David Weatherage 12-9-86 N/R _____

(6) TEMPORARY APPROVAL (If Necessary)

By _____ (SRO) DATE

By _____ DATE

(7) APPROVED BY Joe M. Davis DATE 12-9-86

(8) MISCELLANEOUS

Reviewed/~~Approved~~ By Craig L. Harlin DATE 12/09/86

Reviewed/Approved By _____ DATE _____

(9) COMMENTS (For procedure reissue indicate whether additional changes, other than previously approved changes, are included. Attach additional pages, if necessary.) ADDITIONAL CHANGES INCLUDED. ☐Yes ☐No

(10) COMPARED WITH CONTROL COPY _____ DATE _____

COMPLETION

(11) DATE(S) PERFORMED _____

(12) PROCEDURE COMPLETION VERIFICATION

☐ Yes ☐ N/A Check lists and/or blanks properly initialed, signed, dated or filled in N/A or N/R, as appropriate?

☐ Yes ☐ N/A Listed enclosures attached?

☐ Yes ☐ N/A Data sheets attached, completed, dated and signed?

☐ Yes ☐ N/A Charts, graphs, etc. attached and properly dated, identified and marked?

☐ Yes ☐ N/A Acceptance criteria met?

VERIFIED BY _____ DATE _____

(13) PROCEDURE COMPLETION APPROVED _____ DATE _____

(14) REMARKS (Attach additional pages, if necessary.)

# DUKE POWER COMPANY
# OCONEE NUCLEAR STATION
# CLASSIFICATION OF EMERGENCY

## 1.0 Symptoms

### 1.1 Notification of Unusual Event

1.1.1 Events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant.

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 progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant.

1.2.2 Loss of one fission product barrier.

1.2.3 Any releases are expected to be limited to small fractions of the EPA Protection 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.

1.3.2 Loss of two fission product barriers.

1.3.3 Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near 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.

1.4.2 Loss of two fission product barriers and failure or imminent failure of the third barrier.

1.4.3 Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

## 2.0 Immediate Actions

2.1 Compare actual plant conditions to the Emergency Action Level(s) listed in Enclosure 4.1 then declare the appropriate Emergency Class as indicated.

2.2 Initiate the Emergency Response Procedure (RP) applicable to the Emergency Class as follows:

| | |
|---|---|
| Notification of Unusual Event | RP/0/B/1000/02 |
| Alert | RP/0/B/1000/03 |
| Site Area Emergency | RP/0/B/1000/04 |
| General Emergency | RP/0/B/1000/05 |

## 3.0 Subsequent Actions

3.1 To escalate, de-escalate or close out the Emergency, consult the procedure indicated by the action level.

## 4.0 Enclosures

4.1 Emergency Action Level(s) for Emergency Classes

ENCLOSURE 4.1.1
PRIMARY COOLANT LEAK

## UNUSUAL EVENT

1. REACTOR SHUTDOWN REQUIRED BY RCS LEAKAGE TS 3.1.6 (ONE OF THE FOLLOWING)

- Primary leakage (unidentified) greater than 1 GPM evaluated as unsafe.
- Total primary coolant leakage rate (identified) exceeds 10 GPM
- Any leakage exists through RCS strength boundary (except S/G tubes)
- OTSG tube leakage (Unit 1-.3 GPM Unit 2&3 - 1 GPM)

2. FAILURE OF A PRESSURIZER PORV TO CLOSE FOLLOWING REDUCTION OF APPLICABLE PRESSURE :

- Acoustical monitor indication

WITH

- PZR level increasing with decreasing RCS pressure

AND

- QT temp and pressure alarms

INITIAL NOTIFICATION REQUIREMENTS

SEE EMERGENCY TELEPHONE DIRECTORY

NOTIFY 1,2,3,4

## ALERT

1. PRIMARY COOLANT LEAK RATE GREATER THAN 50 GPM

- Mismatch between total makeup and total letdown (letdown plus controlled leakage) greater than 50 gpm with PZR not increasing.

2. RAPID GROSS FAILURE OF ONE OTSG TUBE WITH LOSS OF OFF-SITE POWER

*NOTE: Leak greater than 10 GPM but less than 200 GPM

- RIA 40 ALERT alarm
- RIA 16/17 HIGH alarm

AND

- RCS leak rate calculation

AND

- LDST level decreasing AND
- Undervoltage - underfrequency on HFB 1 and HFB 2

3. RAPID FAILURE OF STEAM GENERATOR TUBES.

*NOTE: Leak greater than 50 GPM but less than makeup pump capacity.

- RIA 40 ALERT alarm
- RIA 16/17 HIGH alarm

AND

- Rapidly decreasing PZR level AND
- Rapid depressurization of RCS

NOTIFY 1,2,3,4

## SITE AREA EMERGENCY

1. KNOWN LOCA GREATER THAN MAKEUP PUMP CAPACITY

PRIMARY LEAK

- HIGH RB pressure, HIGH RB sump, RIA 4 HIGH alarm, OR
- Decrease in RCS pressure AND
- Loss of subcooling margin OR
- Full HPI and PZR level decreasing

P/S LEAK

- Rx Trip on LOW RCS PRESSURE

AND

- RCS PRESSURE decreasing uncontrollably with $T_{avg}$ constant

AND

- RIA 40 ALERT Alarm
- RIA 16/17 HIGH alarm AND
- No significant increase in RB pressure and sump level

2. RAPID FAILURE OF STEAM GENERATOR TUBE LEAK (GREATER THAN 200 GPM) WITH LOSS OF OFFSITE POWER

- SAE #1 EALs for P/S leak

AND

- Undervoltage - Underfrequency alarms in the 230 KV switchyard.

NOTIFY 1,2,3,4

## GENERAL EMERGENCY

1. SMALL AND LARGE LOCAS WITH FAILURE OF ECCS - LEADS TO CORE MELT.

- LOCA EALs-SAE #1 or SAE #2

AND

- HPI system failure AND
- LPI system failure

2. SMALL LOCA AND INITIALLY SUCCESSFUL ECCS WITH FAILURE OF RB HEAT REMOVAL SYSTEMS OVER SEVERAL HOURS LEADS TO CORE MELT AND FAILURE OF CONTAINMENT

- LOCA EALs in SAE #1 AND
- RB temperature rising

AND

- RB spray system and cooling units fail to function.

NOTIFY 1,2,3,4

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | **4. STEAM LINE BREAK WITH GREATER THAN 10 BUT LESS THAN 50 GPM P/S LEAK RATE**<br><br>P/S LEAK<br>• RIA 40 ALERT alarm<br>• RIA 16/17 HIGH alarm AND<br>• LDST level decreasing<br><br>WITH<br>EITHER<br><br>STEAM LINE BREAK INSIDE RB<br>• Unexpected increase in Rx power AND<br>• Rapid decrease in $T_{avg}$, PZR level, RCS pressure, Steam pressure AND<br>• Increased RB pressure and temperature<br><br>OR<br><br>STEAM LINE BREAK OUTSIDE RB<br>• Unexpected increase in Rx power AND<br>• Rapid decrease in $T_{avg}$, PZR level, RCS pressure, Steam pressure AND<br>• Increased PR pressure and temperature if steam line break inside PR. | **3. STEAM LINE BREAK WITH GREATER THAN 50 GPM P/S LEAKAGE AND INDICATION OF FUEL DAMAGE**<br><br>• Rx trip on Low RCS pressure AND<br>• RCS pressure and $T_{avg}$ decreasing uncontrollably AND<br>• RIA 40 ALERT alarm<br>• RIA 16/17 HIGH alarm AND<br>• Chemistry sample analysis indicates fuel damage - I-131 concentration greater than 70 μCi/ml. | |
| INITIAL NOTIFICATION REQUIREMENTS<br><br>SEE EMERGENCY TELEPHONE DIRECTORY | | | |
| NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | |

## UNUSUAL EVENT

1. FUEL DAMAGE INDICATION

HIGH ACTIVITY SAMPLE RESULTS

- Total activity of RCS due to half lives longer than 30 min exceeds 224 / Ē μCi/ml when the Rx is critical

OR

- I-131 concentration in the secondary side of the steam generator exceeds 1.4 μCi/ml

TOTAL FAILED FUEL EXCEEDS 1%

- I-131 concentration in the RCS is between 70 μCi/ml and 350 μCi/ml

2. ABNORMAL COOLANT TEMPERATURE AND/OR PRESSURE OR ABNORMAL FUEL TEMPERATURE OUTSIDE TS LIMITS

- An event has occurred which requires operation of the TSOR (Thermal Shock Operating Range).

OR

- Exceeding NDT limit

OR

- Shift Supervisor's judgement.

INITIAL NOTIFICATION REQUIREMENTS

SEE EMERGENCY TELEPHONE DIRECTORY

NOTIFY 1,2,3,4

## ALERT

1. SEVERE LOSS OF FUEL CLADDING:

*NOTE: Mechanical clad failure or flow-induced failure.

- RCS sample - 350 μCi/ml to 1770 μCi/ml - I-131 concentration

OR

- RCS sample shows an increase of 70 μCi/ml in a 30 minute period of time.

OR

- 5% total failed fuel rate

NOTIFY 1,2,3,4

## SITE AREA EMERGENCY

1. DEGRADED CORE WITH POSSIBLE LOSS OF COOLABLE GEOMETRY

FLOW INDUCED - MECHANICAL

- RCS sample results indicate GAP activity WITH

- I-131 concentration greater than 1770 μCi/ml

FUEL OVER-TEMPERATURE-

- Incore thermocouple readings greater than 700°F AND

- Excess $H^2$ in RB or RCS sample AND

- RCS sample results indicate I-131 concentration greater than 1300 μCi/ml

FUEL MELT CONDITIONS

- Incore thermocouple readings are above 2300°F AND

- RCS sample results indicate I-131 concentration is greater than 1180 μCi/ml.

NOTIFY 1,2,3,4

## GENERAL EMERGENCY

1. LOSS OF 2 OF 3 FISSION PRODUCT PRODUCT BARRIERS WITH A POTENTIAL FOR LOSS OF 3RD BARRIER:

Any one of the following are indications of the specific barrier lost:

CLADDING FAILURE

- RCS sample results indicate GAP activity.

WITH

- I-131 concentration greater than 1180 μCi/ml.

LOSS OF CONTAINMENT

- RB penetrations are not valved off or closed.

- Steamline break upstream from MSSV and MSSV malfunction.

- Steamline break or stop valve failure with S/G tube leak.

- RB pressure increases and approaches 59 psig WITH loss of RB spray OR cooling units

LOSS OF PRIMARY COOLANT

- HIGH RB pressure
- HIGH RB sump level
- Loss of subcooling margin
- RIA 40 ALERT alarm
- RIA 16/17 HIGH alarm
- RIA 4 HIGH alarm
- RCS pressure decreasing uncontrollably with $T_{avg}$ constant.
- Pressurizer level decreasing

NOTIFY 1,2,3,4

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. RAPID DEPRESSURIZATION OF SECONDARY SIDE. (ANY ONE OF THE FOLLOWING)<br>• Observation/indication of steam line break which causes a rapid pressure decrease below relief valve and/or bypass valve setpoints<br>OR<br>• Excessive FDW flow to one or both OTSG WITH<br>• Rapidly increasing level<br>OR<br>• Rapidly decreasing level | 1. STEAMLINE BREAK WITH GREATER THAN 10 BUT LESS THAN 50 GPM P/S LEAK RATE.<br>P/S LEAK<br>• RIA 40 ALERT alarm<br>• RIA 16/17 HIGH alarm AND<br>• LDST level decreasing<br>WITH EITHER<br>STEAMLINE BREAK INSIDE RB<br>• Unexpected increase in Rx power AND<br>• Rapid decrease in $T_{avg}$, PZR level, RCS pressure, steam pressure AND<br>• Increased RB pressure and temperature<br>OR<br>STEAMLINE BREAK OUTSIDE RB<br>• Unexpected increase in Rx power AND<br>• Rapid decrease in $T_{avg}$, PZR level, RCS pressure, steam pressure AND<br>• Increased PR pressure and temperature if steam line break inside PR. | 1. STEAMLINE BREAK WITH GREATER THAN 50 GPM P/S LEAKAGE AND INDICATION OF FUEL DAMAGE.<br>• Rx trip on LOW RCS pressure or HIGH power AND<br>• RCS pressure and $T_{avg}$ decreasing uncontrollably AND<br>• RIA 40 ALERT alarm<br>• RIA 16/17 HIGH alarm AND<br>• RCS sample results indicate fuel damage - I-131 concentration greater than 70 µCi/ml | |
| INITIAL NOTIFICATION REQUIREMENTS<br>SEE EMERGENCY TELEPHONE DIRECTORY | | | |
| NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | |

ENCLOSURE 4.1.4
HIGH RADIATION/RADIOLOGICAL EFFLUENTS

## UNUSUAL EVENT

1. RADIOLOGICAL EFFLUENT TS LIMITS EXCEEDED

*NOTE: TS for ONS gaseous release Shared 3-Unit System

GASEOUS EFFLUENT

- RIA-45 in valid alarm mode for more than 1 hour AND
- RIA-46 in valid alarm mode

AND

- Release rate calculations using vent sample analysis and flow rate data are in excess of TS limits per HP/0/B/1009/15.

LIQUID EFFLUENT

- RIA-33/34 alarm setpoint established in discharge permit exceeded AND
- Flow not terminated AND
- Samples at restricted area boundary exceed limits of TS 3.9.

INITIAL NOTIFICATION REQUIREMENTS

SEE EMERGENCY TELEPHONE DIRECTORY

NOTIFY 1,2,3,4 and 9 **
**Liquid releases only

## ALERT

1. HIGH RADIATION LEVEL OR HIGH AIRBORNE CONTAMINATION:

- Step increase by a factor of 1000 times normal setpoint of RIA-32, 40, 35, 31, 41, 51, 53.

2. RADIOLOGICAL EFFLUENTS EXCEEDING 10 TIMES TS

GASEOUS EFFLUENTS

- RIA-46 in valid alarm mode verified by RIA-45

AND

- 10 x Release rate calculations using vent sample analysis and flow rate data are in excess of limits established by HP/0/B/1009/15.

LIQUID EFFLUENTS

- 10 x RIA-33/34 alarm setpoint established in discharge permit AND
- Isolation valve fails to close and flow is not terminated AND
- Samples at restricted area boundary exceed 10 x limits of TS 3.9.

NOTIFY 1,2,3,4 and 9 **
**Liquid releases only

## SITE AREA EMERGENCY

1. ACCIDENTAL RELEASE OF GASES AT THE SITE BOUNDARY UNDER METEOROLOGICAL CONDITIONS EXISTING AT THE TIME OF RELEASE.

- RIA 45 valid alarm mode

AND

- RIA 46 reading greater than 80 cpm for 30 minutes

WITH

- Dose calculations verifying dose rates at the site boundary greater than or equal to:

50 mR WB for 30 minutes

OR

500 mR WB for 2 minutes

2. RADIATION LEVEL IN CONTAINMENT WITH LEAK RATE APPROPRIATE FOR EXISTING RB PRESSURE.

- RIA 57 or 58 HIGH alarm AND
- Dose rate inside RB coupled with RB leak rate results in calculated dose rate at site boundary greater than 50 mR/hr WB for 30 minutes or 500 mR/hr WB for 2 minutes.

OR

- Radiation Monitoring teams measure I-131 equivalent greater than:

250 mR/hr ($9 \times 10^{-8}$ µCi/ml) for 30 min.

OR

2500 mR/hr ($9 \times 10^{-7}$ µCi/ml) for 2 min. at the site boundary.

NOTIFY 1,2,3,4 and 9 **
**Liquid releases only

## GENERAL EMERGENCY

1. ACCIDENTAL RELEASE UNDER ACTUAL METEOROLOGICAL CONDITIONS AT SITE BOUNDARY:

- RIA 45 valid alarm mode

AND

- RIA 46 reading 16,000 cpm

WITH

- Dose calculations verifying

1 R/hr Whole Body

OR

5 R/hr Thyroid

2. RADIATION LEVEL IN RB WITH LEAK RATE APPROPRIATE FOR EXISTING RB PRESSURE.

- RIA 57 or 58 ALERT alarm

AND

- Dose Projection equals

1 R/hr Whole Body

OR

5 R/hr thyroid

AND

- Radiation Monitoring teams verify dose projections offsite past the Site Boundary.

NOTIFY 1,2,3,4

ENCLOSURE
LOSS OF SHUTDOWN FUNCTIONS

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | 1. LOSS OF FUNCTIONS NEEDED TO MAINTAIN PLANT COLD SHUTDOWN:<br>• LPI system not functional<br>AND<br>• Inability to sustain either natural or forced circulation.<br>2. FAILURE OF THE RPS TO INITIATE AND COMPLETE A SCRAM WHICH BRINGS THE RX SUBCRITICAL<br>• 2 or more RPS channels trip<br>AND<br>• Control Rods must be manually tripped or inserted to shutdown the reactor. | 1. LOSS OF FUNCTIONS NEEDED FOR PLANT HOT SHUTDOWN:<br>• No HPI flow<br>AND<br>• No FDW flow and no EFDW flow<br>2. TRANSIENT REQUIRING OPERATION OF SD SYSTEMS WITH FAILURE TO SCRAM.<br>• 2 or more RPS channels trip<br>AND<br>• Control rods remain withdrawn and can not be manually tripped or inserted. | 1. TRANSIENT REQUIRING RX TRIP WITH FAILURE TO SCRAM. ADDITIONAL FAILURE OF CORE COOLING AND ECCS WOULD LEAD TO CORE MELT:<br>• RCS pressure greater than 2500 psig<br>AND<br>• RB pressure rapidly increasing<br>AND<br>• Rx remains critical<br>2. TRANSIENT INITIATED BY LOSS OF FDW AND CONDENSATE SYSTEMS FOLLOWED BY FAILURE OF EFDW FOR EXTENDED PERIOD. CORE MELT POSSIBLE IN SEVERAL HOURS.<br>• Loss of main condenser<br>AND<br>• No FDW OR EFDW flow<br>AND<br>• No HPI/LPI flow |
| INITIAL NOTIFICATION REQUIREMENTS<br>SEE EMERGENCY TELEPHONE DIRECTORY | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 |

ENCLOSURE 4.1.6
LOSS OF POWER

## UNUSUAL EVENT

1. LOSS OF OFFSITE POWER OR LOSS OF ONSITE AC POWER CAPABILITY

- Switchyard isolation OR
- Underfrequency-undervoltage on MFB #1 or #2 AND
- Keowee emergency start with transfer of auxiliaries to STBY buses.

INITIAL NOTIFICATION REQUIREMENTS

SEE EMERGENCY TELEPHONE DIRECTORY

Notify 1,2,3,4

## ALERT

1. LOSS OF OFFSITE POWER AND LOSS OF ALL ONSITE AC POWER

*NOTE: Alert declared as soon as power outage occurs.

- Load rejection and Rx trip AND
- SY isolation on undervoltage underfrequency AND
- Loss of voltage on MFB 1 & 2 AND
- Keowee emergency start with transfer of auxiliaries to STBY buses.

2. LOSS OF ALL ONSITE DC POWER

*NOTE: Alert declared as soon as a loss of DC power occurs.

- Low voltage on all DC buses OR
- DC buses unavailable to be closed.

3. RAPID GROSS FAILURE OF ONE OTSG TUBE WITH LOSS OF OFF-SITE POWER.

*NOTE: Leak greater than 10 GPM but less than 200 GPM.

- RIA 40 ALERT alarm
- RIA 16/17 HIGH alarm AND
- LDST level decreasing AND
- RCS leak rate calculation

AND

- Undervoltage - underfrequency on MFB 1 and MFB 2

NOTIFY 1,2,3,4

## SITE AREA EMERGENCY

1. LOSS OF OFFSITE POWER AND LOSS OF ONSITE AC POWER FOR MORE THAN 15 MINUTES

- Undervoltage on MFB 1 & 2 AND
- Keowee Hydro fails to start either manual or automatic

2. LOSS OF ALL VITAL ONSITE DC POWER FOR MORE THAN 15 MINUTES.

- DC bus undervoltage alarms (all buses) AND
- DC alarm on EPSL.

3. RAPID FAILURE OF STEAM GENERATOR TUBE LEAK (GREATER THAN 200 GPM) WITH LOSS OF OFFSITE POWER.

- Rx trip on LOW RCS PRESSURE AND
- RCS PRESSURE decreasing uncontrollably with $T_{avg}$ constant AND
- RIA 40 ALERT alarm
- RIA 16/17 HIGH alarm AND
- No significant increase in RB pressure and sump level AND
- Undervoltage-underfrequency alarms in the 230 KV switchyard.

NOTIFY 1,2,3,4

## GENERAL EMERGENCY

1. FAILURE OF OFFSITE AND ONSITE POWER ALONG WITH TOTAL LOSS OF EFDW MAKE-UP CAPABILITY FOR SEVERAL HOURS.

- Undervoltage on MFB 1 & 2 alarms for greater than 2 hours AND
- Keowee Hydro fails to start (either manual or automatic) AND
- EFDW pumps fail to start.

2. SMALL AND LARGE LOCAS WITH FAILURE OF ECCS - LEADS TO CORE MELT.

- LOCA EALs-SAE #1 or SAE #2

AND

- HPI system failure AND
- LPI system failure

NOTIFY 1,2,3,4

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. FIRE WITHIN THE PLANT LASTING MORE THAN 10 MINUTES.<br><br>NOTE: Within the plant means: Aux Bldg, TB, RB, Keowee Hydro<br><br>• Efforts to extinguish a fire within the plant lasts longer than 10 minutes. | 1. FIRE POTENTIALLY AFFECTING SAFETY SYSTEMS.<br><br>• Fire alarm in vital areas and visual observation of fires affecting safety related systems AND<br><br>• Shift Supervisor's judgement<br>OR<br>• Fire in the Control Room requiring evacuation and Unit being shutdown from the auxiliary shutdown panel. | 1. FIRE COMPROMISING THE FUNCTIONS OF SAFETY SYSTEMS.<br><br>• Observation of a fire causing the loss of redundant safety system trains or functions.<br>OR<br>• Fire in Control Room requiring evacuation and Unit requires the shutdown capabilities of the SSF. | 1. ANY MAJOR INTERNAL OR EXTERNAL EVENTS WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO PLANT.<br><br>• Visual observation of fires AND<br><br>• Shift Supervisor's judgement |
| 2. SECURITY THREAT OR ATTEMPTED ENTRY OR ATTEMPTED SABOTAGE. (NOTE*)<br><br>One of the following:<br><br>• Bomb Threat/Extortion<br><br>• Discovery of bomb within the site boundary<br><br>• Civil disturbance (hostile)<br><br>• Intrusion/Attempted Intrusion (Protected area)<br><br>• Hostage situation<br><br>NOTE*: RP/0/B/1000/07 shall be used in conjunction with all security-related emergency classifications. | 2. ONGOING SECURITY COMPROMISE (NOTE*)<br><br>One of the following:<br><br>• Adversaries commandeer an area of the plant but not control over the SD capability.<br><br>• Discovery of breached barrier caused by intrusion or sabotage in vital area.<br><br>• Discovery of bomb in the protected area.<br><br>• Adversaries commandeer the CAS OR SAS Security area. | 2. IMMINENT LOSS OF PHYSICAL CONTROL OF THE PLANT (NOTE*)<br><br>One of the following:<br><br>• Physical attack resulting in imminent occupancy of the CR, AUX SD panels or other vital areas as determined by the Emergency Coordinator.<br><br>• Discovery of bomb in the vital areas.<br><br>• Adversaries commandeer the CAS AND SAS Security areas. | 2. LOSS OF PHYSICAL CONTROL OF THE PLANT (NOTE*)<br><br>• Physical attack resulting in unauthorized personnel occupying the CR or any other vital areas as determined by the Emergency Coordinator. |
| INITIAL NOTIFICATION REQUIREMENTS<br><br>SEE EMERGENCY TELEPHONE DIRECTORY | | | |
| NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 |

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | 1. FUEL DAMAGE ACCIDENT WITH RELEASE OF RADIOACTIVITY TO:<br><br>CONTAINMENT<br>• RIA 2,3,4, valid ALERT alarm<br>AND<br>• RB Equipment Hatch open<br><br>FUEL-HANDLING BUILDING<br>• RIA 6 ALERT alarm AND<br>• RIA 41 HIGH alarm AND<br>• RIA 46 in valid alarm mode verified by RIA 45<br>AND<br>• Release rate calculations using vent sample analysis and flow rate data are in excess of limits established by HP/0/B/1009/15. | 1. MAJOR DAMAGE TO SPENT FUEL: DAMAGE MECHANISM IS:<br>• Large object damages fuel OR<br>• Water loss below fuel level<br>IN<br>CONTAINMENT<br>• RIA 2,3,4, 49 HIGH alarm WITH<br>• RIA 57/58 HIGH alarm AND<br>• Dose rate inside RB coupled with RB leak rate results in calculated dose rate at Site boundary greater than:<br>50 mR/hr WB for 30 minutes<br>OR<br>500 mR/hr WB for 2 minutes<br><br>FUEL HANDLING BUILDING<br>• RIA 6 HIGH alarm OR<br>• RIA 41 ALERT alarm AND<br>• RIA 45 in valid alarm mode<br>AND<br>• RIA 46 reading greater than 80 cpm for 30 minutes<br>WITH<br>• Dose calculations verifying dose rates at the site boundary greater than or equal to:<br>50 mR/hr WB for 30 minutes<br>500 mR/hr WB for 2 minutes | |
| INITIAL NOTIFICATION REQUIREMENTS<br><br>SEE EMERGENCY TELEPHONE DIRECTORY | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | |

ENCLOSURE
NATURAL DISASTERS [illegible]THER HAZARDS

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. EARTHQUAKE FELT IN PLANT OR DETECTED | 1. DBE ≥ .05g | PLANT NOT IN COLD SHUTDOWN: | 1. ANY MAJOR INTERNAL OR EXTERNAL EVENTS (i.e., FIRES, EARTHQUAKES SUBSTANTIALLY BEYOND DESIGN LEVELS) WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO PLANT SYSTEMS. |
| 2. LAKE LEVEL (Keowee)<br>• low < 775 ft. | 2. TORNADO STRIKING FACILITY | 1. MHE ≥ .10g (Class 1 structure founded on bedrock)<br>MHE > .15 g (structures founded on overburden) | |
| 3. ANY TORNADO WITHIN THE SITE BOUNDARY. | 3. AIRCRAFT CRASH ON FACILITY | 2. DAMAGE FROM TORNADO, MISSILE OR EXPLOSION, AIRCRAFT CRASH CAUSING INABILITY TO ESTABLISH HOT SHUTDOWN:<br>• No HPI injection<br>AND<br>• No FDW flow and no EDFW flow | |
| 4. AIRCRAFT CRASH ONSITE OR UNUSUAL AIRCRAFT ACTIVITY OVER SITE. | 4. MISSILE IMPACT ON FACILITY | | |
| 5. EXPLOSION WITHIN THE SITE BOUNDARY. | 5. EXPLOSION DAMAGE TO FACILITY AFFECTING PLANT OPERATION | | |
| 6. TOXIC OR FLAMMABLE GAS RELEASE WITHIN THE SITE BOUNDARY | 6. UNCONTROLLED ENTRY OF TOXIC OR FLAMMABLE GAS INTO FACILTTY AFFECTING SAFE OPERATION OF PLANT | 3. ENTRY OF CONTROLLED TOXIC OR FLAMMABLE GASES INTO CR, CABLE SPREADING ROOMS, RB, SWITCHGEAR ROOM, AUX. SD PANELS AFFECTING SAFE OPERATION OF PLANT. | |
| 7. TURBINE ROTATING COMPONENT FAILURE CAUSING RAPID PLANT SD. | 7. TURBINE ROTATING COMPONENT FAILURE CAUSING PENETRATION OF TURBINE CASING. | | |
| INITIAL NOTIFICATION REQUIREMENTS<br>SEE EMERGENCY TELEPHONE DIRECTORY | | | |
| NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 |

ENCLOSURE 4.1.10
OTHER ABNORMAL PLANT CONDITIONS

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. ECCS INITIATED:<br>• 1 or more ES channels actuated WITH<br>• Flow indicated in A or B injection header (LPI or HPI) on valid RCS LOW pressure<br>OR<br>• Valid RB HIGH pressure signal. | 1. OTHER PLANT CONDITIONS THAT WARRANT PRECAUTIONARY ACTIVATION OF THE TSC AND PLACING THE CMC AND OTHER KEY PERSONNEL ON STANDBY.<br>• Emergency Coordinator judgment<br>• Evacuation of Control Room and Unit being shutdown from the Auxiliary shutdown panel. | 1. OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF THE TSC AND CMC.<br>• Emergency Coordinator judgment<br>• Evacuation of Control Room and Unit requires the shutdown capabilities of the SSF. | 1. OTHER PLANT CONDITIONS EXIST FROM WHATEVER SOURCE THAT MAKE RELEASE OF LARGE AMOUNTS OF RADIOACTIVITY IN A SHORT TIME PERIOD POSSIBLE<br>• Any core melt situation |
| 2. LOSS OF CONTAINMENT INTEGRITY REQUIRING SD BY TS.<br>• Limits as established in TS 3.6 exceeded. | 2. LOSS OF ASSESSMENT<br>• Loss of 2 or more Control Room statalarm panels for more than 15 minutes.<br>(NOTE: Loss must occur on the same Unit.)<br>Unit 1<br>• 1SA1-9, 14-16, 18<br>Unit 2<br>• 2SA1-9, 14-16<br>Unit 3<br>• 3SA1-9, 14-16, 18 | | |
| 3. LOSS OF ES FEATURE OR FIRE PROTECTION SYSTEM FUNCTION REQUIRING SD BY TS.<br>EX: Malfunction, Personnel Error, Procedural Inadequacy.<br>• ES System found inoperable (TS 3.3)<br>OR<br>• Fire suppression water system found inoperable (include Keowee Hydro) TS 3.17 | | | |
| INITIAL NOTIFICATION REQUIREMENTS<br>SEE EMERGENCY TELEPHONE DIRECTORY | | | |
| NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 | NOTIFY 1,2,3,4 |

| UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|

4. TREATMENT OF PERSONNEL AT OFFSITE HOSPITAL

Any one of the following:

- Decontamination efforts fail to reduce external contamination below 150 cpm

**AND**

Health Physics determines that radiological controls are required for offsite medical treatment.

- Internal contamination requiring medical assessment/treatment
- Irradiation requiring medical treatment/assessment.

5. SIGNIFICANT LOSS OF ASSESSMENT OR COMMUNICATION CAPABILITY

- Loss of sub-cooling margin per TS 3.1.12 requiring shutdown.
- Loss of ONS communications capability to all offsite agencies.

INITIAL NOTIFICATION REQUIREMENTS

SEE EMERGENCY TELEPHONE DIRECTORY

NOTIFY 1,2,3,4