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U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, D. C. 20555

Subject: McGuire Nuclear Station
Docket Nos. 50-369 and 50-370
Catawba Nuclear Station
Docket Nos. 50-413 and 50-414
Oconee Nuclear Station
Docket Nos. 50-269, 50-270 and 50-287
Crisis Management Implementing Procedures

Gentlemen:

Attached for NRC use and review is Revision 6 dated November 30, 1989 to the Duke Power Company Crisis Management Implementing Procedure CMIP-11 (Classification of Emergency for McGuire Nuclear Station).

By copy of this letter two revisions are being provided to NRC, Region II, Atlanta.

Very truly yours,

Hal B. Tucker

Hal B. Tucker, Vice President
Nuclear Production

KLC:klc

attachment



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December 1, 1989

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CRISIS MANAGEMENT IMPLEMENTING PROCEDURE

CMIP-11

# Classification of Emergency for McGuire Nuclear Station

Rev. 6
November 30, 1989

K E Harris
Approved By

12/5/89
Date

CMIP-11
CLASSIFICATION OF EMERGENCY FOR
McGUIRE NUCLEAR STATION

## 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 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.

1.3.2 Any releases are not expected to exceed EPA Protection 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 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.

If a change in the emergency class is made, perform steps 2.2, 2.3, and 2.4 below.

2.2 Instruct the State/County Communicator to notify the state(s) and counties per CMIP-13 of any change in the emergency class. If the emergency class is SITE AREA EMERGENCY or GENERAL EMERGENCY, determine protective action recommendations per CMIP-1 and transmit these recommendations.

NOTE: Notifications to the state(s) and counties must be made within 15 minutes whenever there is a change in the emergency classification.

2.3 Announce the change in the emergency class to all CMC personnel and to the Emergency Coordinator at the TSC.

2.4 Instruct the NRC Communicator in the CMC Plant Assessment Group to notify NRC immediately and within one hour per CMIP-15.

3.0 SUBSEQUENT ACTIONS

3.1 To de-escalate or close out the Emergency, compare plant conditions to the Initiating Conditions of Enclosure 4.1.

Notify state(s), counties, and NRC by verbal summary of any reduction or termination in the emergency class followed by a written summary within eight (8) hours.

4.0 ENCLOSURES

4.1 Emergency Event List for Emergency Classes

## 4.2 Engineered Safety Features

## NOTIFICATION OF UNUSUAL EVENT

**1. Any NC system leakage greater than Tech Spec limits in Modes 1-4.**

- Greater than 1 gpm unidentified NC system leakage in modes 1-4

AND

Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2.

- Greater than 10 gpm identified NC system leakage

AND

Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2.

- Greater than 500 gpd tube leakage in any S/G in modes 1-4

AND

Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2.

## ALERT

**1. Any NC system leakage greater than 50 gpm in Modes 1-4.**

- NC system leakage greater than 50 gpm in modes 1-4

AND

NC subcooling greater than 0 Deg. F.

AND

Leak cannot be isolated within 15 minutes.

**2. S/G tube leak with loss of offsite power**

- S/G tube leak greater than 10 gpm

AND

NC subcooling greater than 0 Deg. F.

Both Unit related main bus lines de-energized.

## SITE AREA EMERGENCY

**1. Any NC system leakage greater than available ECCS capacity.**

- Safety Injection activated or required

AND

Existing NV, NI and ND flow cannot maintain NC subcooling greater than 0 Deg. F.

**2. S/G tube leak with an unisolable steam line break outside containment and indication of fuel damage.**

- S/G tube leak greater than 50 gpm

AND

Unisolable steam line break on the affected S/G outside containment

AND

Fuel damage as determined by Event Category 4.1.2.

END

## GENERAL EMERGENCY

**1. Any LOCA with failure of ECCS**

- LOCA with failure of both trains of ECCS injection

AND

NC subcooling cannot be maintained greater than 0 Deg. F.

- LOCA with failure of both trains of ECCS recirculation

AND

NC subcooling cannot be maintained greater than 0 Deg. F.

- LOCA

AND

Plant conditions require entry in EP/1 or 2/A/5000/12.1 (Response to Inadequate Core Cooling)

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| • Greater than 1 gpm total tube leakage in all S/G's.<br><br>AND<br><br>Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2.<br><br>• Any NC system pressure boundary leakage in modes 1-4.<br><br>AND<br><br>Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2.<br><br>• Greater than 1 gpm leakage from any NC pressure isolation valve at 2235 psig in modes 1-4<br><br>AND<br><br>Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2. | **3. S/G tube leak with an unisolable steam line break outside containment.**<br><br>• S/G tube leak greater than 10 gpm<br><br>AND<br><br>NC subcooling greater than 0 Deg F<br><br>AND<br><br>Unisolable steam line break outside containment<br><br>• Unisolable steam line break outside containment<br><br>AND<br><br>Field monitoring teams detect activity at the protected area fence at greater than or equal to 2 mRem/hr whole body.<br><br>END | | **2. LOCA with initially successful ECCS followed by failure of ECCS heat sink and failure of containment heat removal.**<br><br>• LOCA<br><br>AND<br><br>Loss of recirculation heat sink<br><br>AND<br><br>Loss of containment spray heat sink<br><br>END |

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

- Greater than 40 gpm controlled NC system leakage at 2235 psig in modes 1-4.

AND

Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.6.2.

**2. Any unisolable NC system leakage greater than 50 gpm in Modes 5 and 6.**

**3. Failure of an unisolable PZR PORV or safety valve to close following a reduction of NC pressure.**

END

## NOTIFICATION OF UNUSUAL EVENT

**1. NC system activity greater than Tech Spec limits in Modes 1-5.**

- Greater than 1.0 microcurie per gram dose equivalent I-131 for greater than 48 hrs. continuous per chemistry analysis in modes 1-5.

AND

Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.8.

- Dose equivalent I-131 in excess of Tech Spec Figure 3.4-1 per Chemistry analysis in modes 1-5.

AND

Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.8.

## ALERT

**1. Severe loss of fuel cladding in Modes 1-5.**

- Valid increase of 1000 times background set-points of any containment radiation monitor in modes 1-5.
- Valid increase of 1000 times background set-point of reactor coolant system process monitor (EMF-48) in modes 1-5.
- Chemistry analysis indicates greater than or equal to 5% total fuel clad failure or increase of 1% fuel failures within 30 minutes in modes 1-5.

END

## SITE AREA EMERGENCY

**1. Degraded core with possible loss of coolable geometry.**

- Average of five highest core exit T/C's indicates greater than or equal to 700 Deg. F.
- Lower Range RVLIS less than 43% level during a LOCA event.
- RVLIS D/P setpoint at value which requires entry into Degraded Core Cooling section of Emergency Procedures.
- Containment hydrogen concentration greater than or equal to 1% and increasing greater than or equal to 0.1% per hour.
- Containment EMF's (51a or 51b) valid reading of 179 R/hr.

END

## GENERAL EMERGENCY

**1. Loss of 2 of 3 fission product barriers with potential for loss of 3rd barrier.**

NOTE: Satisfy **'A'** and **'B'**

**A. Loss of clad or NC system barrier**

- Total fuel clad failure greater than 20% per Chemistry analysis.
- Containment EMF's (51a or 51b) valid reading of 1100 R/hr (1 Rem WB or 5 Rem thyroid at site boundary)
- Plant conditions require entry into EP/1 or 2/A/5000/12.1 (Response to Inadequate Core Cooling).
- Containment atmosphere $H^2$ concentration greater than or equal to 9%.
- Containment pressure greater than or equal to 60 psig.

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| • Specific activity greater than 100/E microcuries per gram per Chemistry analysis.<br><br>AND<br><br>Load reduction or plant cooldown initiated pursuant to Tech Spec 3.4.8<br><br>END | | | **B. Loss of or threat to barrier**<br><br>• Incomplete containment integrity<br><br>• Known containment leakage in excess of Tech Specs.<br><br>• Containment atmosphere $H^2$ concentration greater than or equal to 9%.<br><br>• Containment pressure greater than or equal to 60 psig.<br><br>END |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| **1. Steam line break which results in rapid depressurization of the secondary side.**<br><br>◆ Steam line depressurization resulting in safety injection or main steam isolation<br><br>END | **1. Unisolable steam line break outside containment with a S/G tube leak.**<br><br>◆ Unisolable steam line break outside containment.<br><br>AND<br><br>NC subcooling greater than or equal to 0 degree F.<br><br>AND<br><br>S/G tube leak greater than 10 gpm.<br><br>◆ Unisolable steam line break outside containment.<br><br>AND<br><br>Field monitoring teams detect activity at the protected area fence at greater than or equal to 2 mRem/hr whole body. | **1. Unisolable steam line break outside containment with a S/G tube leak and indication of fuel damage.**<br><br>◆ Unisolable steam line break on the affected S/G outside containment.<br><br>AND<br><br>S/G tube leak greater than 50 gpm.<br><br>AND<br><br>Fuel damage as determined by Event 4.1.2.<br><br>END | N/A |

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

**2. Steam line break with failure of ECCS or ESF.**

- Steam line depressurization resulting in safety injection signal.

AND

Failure of both trains of ECCS injection.

- Steam line depressurization resulting in Main Steam Isolation signal.

AND

Failure of two or more Main Steam Isolation Valves to close.

END

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. **Liquid or gaseous radiological effluents exceed Tech. Spec. Limits as determined by RP or Chemistry Procedures.**<br><br>END | 1. **High radiation levels or high airborne contamination**<br><br>• Any valid EMF reading greater than or equal to 1000 times trip I setpoint<br><br>2. **Liquid or gaseous radiological effluents exceed 10 times Tech Spec limits as determined by RP or Chemistry procedures.**<br><br>END | 1. **Accidental releases of gases**<br><br>• EMF-37 Trip II alarm.<br><br>AND<br><br>EMF-36L reading greater than 6.3E5 cpm.<br><br>AND<br><br>Calculations verify that dose rates at the site boundary are greater than or equal to:<br><br>50 mRem/hr WB or 250 mRem/hr thyroid for 30 minutes<br><br>• Calculations determine dose rates or Field Monitoring Teams measure activity at the Site Boundary greater than or equal to:<br><br>50 mRem/hr WB or 250 mRem/hr thyroid for 30 minutes.<br><br>END | 1. **Accidental releases of gases**<br><br>• EMF-37 Trip II alarm.<br><br>AND<br><br>EMF-36H reading greater than 1.4E3 cpm.<br><br>AND<br><br>2 Hr dose calculation verifies dose rates at the site boundary are greater than or equal to:<br><br>1 Rem WB<br><br>OR<br><br>5 Rem thyroid<br><br>• Dose calculations or field monitoring team measurements result in a 2 hour projection at the site boundary of:<br><br>1 Rem WB<br><br>OR<br><br>5 Rem thyroid<br><br>END |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| N/A | **1. Complete loss of any function needed to maintain core cooling in modes 5 and 6.**<br><br>• Failure of heat sink results in the loss of NC System subcooling.<br><br>**2. Transient with failure of the Reactor Protection System to automatically initiate and complete a Rx trip which brings the Reactor Subcritical (ATWS Event)**<br><br>END | **1. Complete loss of any function needed for hot shutdown conditions**<br><br>• Failure of heat sink results in the inability to maintain hot shutdown.<br><br>AND<br><br>NC subcooling cannot be maintained greater than 0 Deg. F.<br><br>• Inability to feed S/G's from any source in Mode 1-3.<br><br>AND<br><br>NC subcooling cannot be maintained greater than 0 Deg. F. | **1. Transient initiated by loss of CF and CM systems followed by failure of heat removal capability for an extended period.**<br><br>• Loss of CM/CF feedwater flow capability.<br><br>AND<br><br>CA flow cannot be established within 30 minutes.<br><br>AND<br><br>NC system feed and bleed cannot be established or maintained. |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | | **2. Transient requiring operation of shutdown systems with failure to trip (power generation continues).**<br><br>• Transient with failure of the reactor protection system to automatically initiate and complete a Rx trip which brings the reactor subcritical (ATWS event).<br><br>AND<br><br>Manual Rx trip from the control room fails to bring the reactor sub-critical.<br><br>AND<br><br>Chemistry analysis indicates greater than or equal to 5% total fuel clad failure or increase of 1% fuel failures within 30 minutes. | **2. Transient requiring a Rx trip with failure to trip and failure of core cooling.**<br><br>• Transient with failure of the reactor protection system to automatically initiate and complete a Rx trip which brings the reactor subcritical (ATWS event).<br><br>AND<br><br>Manual Rx trip from the control room fails to bring the reactor sub-critical.<br><br>AND<br><br>Chemistry analysis indicates greater than or equal to 5% total fuel clad failure or increase of 1% fuel failures with 30 minutes.<br><br>AND<br><br>Plant conditions require entry into EP/1or2/A/5000/12.1 (Response to Inadequate Core Cooling). |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | | **3. Inability to maintain cold shutdown with loss of reactor vessel coolant inventory in Modes 5 and 6.**<br><br>• Failure of heat sink causes loss of cold shutdown conditions in modes 5 and 6.<br><br>AND<br><br>Lower Range RVLIS level decreasing after initation of NC System Makeup.<br><br>• Failure of heat sink causes loss of cold shutdown conditions in modes 5 and 6.<br><br>AND<br><br>NC System narrow range level less than 14 inches and decreasing after initiation of NC System Makeup.<br><br>• Failure of heat sink causes loss of Cold Shutdown conditions in modes 5 and 6.<br><br>AND | **3. Loss of heat sink with subsequent core uncovery in Modes 5 and 6.**<br><br>• Failure of heat sink causes loss of cold shutdown conditions in modes 5 and 6.<br><br>AND<br><br>Lower Range RVLIS level indicates core remains substantially uncovered (less than 43% level). |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | | Either Train ultrasonic level indication less than 14 inches and decreasing after initiation of NC System makeup.<br><br>• Failure of heat sink causes loss of cold shutdown conditions in modes 5 and 6.<br><br>AND<br><br>Reliable NC System level indication unavailable due to NC System pressurization.<br><br>AND<br><br>Core exit T/C's or AP/1 or 2/A/5500/19 (Loss of Residual Heat Removal) data indicate boiling in the core.<br><br>AND<br><br>Available make-up rate (as indicated by flow rate instrumentation or rate of FWST level decrease) less than applicable data book curve.<br><br>END | • Failure of heat sink causes loss of cold shutdown conditions in modes 5 and 6.<br><br>AND<br><br>Core Exit T/Cs indicate superheat at the core exit.<br><br>AND<br><br>Available make-up rate (as indicated by Flow Rate Instrumentation or rate of FWST Level decrease) less than applicable data book curve.<br><br>• Failure of heat sink causes loss of cold shutdown conditions in modes 5 and 6.<br><br>AND<br><br>Available make-up rate (as indicated by Flow Rate Instrumentation or rate of FWST Level decrease) less than applicable data book curve. |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | | | AND<br><br>NC System level below bottom range of available level indication.<br><br>AND<br><br>Emergency Coordinator judgement that core uncovery is imminent.<br><br>END |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| **1. Loss of offsite power in Modes 1-6.**<br><br>• Both unit related main bus lines de-energized. in modes 1-6.<br><br>**2. Loss of onsite AC power capability in Modes 1-4.**<br><br>• Both D/G's are incapable (for greater than 2 hours) of powering the 4160 V essential busses in modes 1-4.<br><br>**3. Loss of onsite AC power capability in Modes 5 and 6.**<br><br>• Both D/G's are incapable (for greater than 8 hours) of powering the 4160 V essential busses in modes 5 and 6.<br><br>END | **1. Loss of offsite power and loss of all onsite AC power for greater than 15 minutes in Modes 5 & 6.**<br><br>• Both 4160 V essential buses are de-energized for greater than 15 minutes in modes 5 and 6.<br><br>**2. Loss of all vital DC power for greater than 15 minutes in Modes 5 & 6.**<br><br>• Both unit related EVDA and EVDD buses de-energized for greater than 15 minutes in modes 5 and 6.<br><br>END | **1. Loss of offsite power and loss of all onsite AC power for greater than 15 minutes in Modes 1-4.**<br><br>• Both 4160 V essential buses are de-energized for greater than 15 minutes in Modes 1-4.<br><br>**2. Loss of all vital DC power for greater than 15 minutes in Modes 1-4.**<br><br>• Both unit related EVDA and EVDD buses de-energized for greater than 15 minutes in Modes 1-4.<br><br>END | **1. Loss of offsite power and loss of all onsite AC power with total loss of S/G's feed capability in Modes 1-4.**<br><br>• Both 4160 V essential buses are de-energized in modes 1-4.<br><br>AND<br><br>Loss of CM/CF feedwater flow capability.<br><br>AND<br><br>CA flow cannot be established within 30 minutes.<br><br>END |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| **1. Fire within the plant (see Note) that takes more than 10 minutes to extinguish.**<br><br>**2. Security threat.**<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/extortion<br><br>◆ Security threat as determined by Emergency Coordinator and Security<br><br>END<br><br>NOTE: Plant is defined as: Aux. Bldg, TB, SB, RB, D/G Rm, Doghouses, SSF, Interim Radwaste Facility | **1. Fires defeating safety system functions required for current operating mode.**<br><br>◆ Fire resulting in loss of any required ESF function (both trains defeated or fire defeats the single operable train).<br><br>◆ Fire requiring Control Room evacuation<br><br>AND<br><br>Control established (or in process of being established) from the Standby Shutdown Facility (SSF). | **1. Fire compromising the functions of shutdown systems.**<br><br>◆ Fire that results in inability to maintain Hot Shutdown<br><br>AND<br><br>NC subcooling cannot be maintained greater than 0 degrees F.<br><br>◆ Fire requiring Control Room evacuation<br><br>AND<br><br>Control cannot be established from the Standby Shutdown Facility (SSF).<br><br>AND<br><br>NC subcooling cannot be maintained greater than 0 degrees F. | **1. Any major fire or security threat which could cause massive common damage to plant systems.**<br><br>**2. Loss of physical control of the plant.**<br><br>◆ Physical attack on the plant (see Note) has resulted in occupancy of the control room or auxiliary shutdown panels by unauthorized personnel.<br><br>END |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| | **2. Ongoing Security compromise.**<br><br>◆ Adversaries commandeer an area of the plant but do not control any plant vital areas.<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>◆ Ongoing security compromise as determined by Emergency Coordinator and Security<br><br>END | **2. Imminent loss of physical control of a plant vital area.**<br><br>◆ Physical attack resulting in imminent occupancy of the Control Room or other vital areas<br><br>◆ Discovery of bomb in a plant Vital Area.<br><br>END | |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| N/A | **1. Damage to Spent Fuel with release of radioactivity .**<br><br>**CONTAINMENT**<br><br>• Valid Trip II Alarm on 1EMF16 or 2EMF3<br><br>AND<br><br>Dose rate calculations using vent sample analysis and flow rate data are in excess of 10 times limits established by Technical Specifications<br><br>**FUEL HANDLING BUILDING**<br><br>• Valid Trip II Alarm on 1EMF17 or 2EMF4<br><br>AND<br><br>Dose rate calculations using vent sample analysis and flow rate data are in excess of 10 times limits established by Technical Specifications<br><br>END | **1. Major damage to spent fuel with release of radioactivity**<br><br>**CONTAINMENT**<br><br>• Valid trip II Alarm on 1EMF16 or 2EMF3<br><br>AND<br><br>Dose rate calculations using unit vent sample analyses and flow rate data equivalent to:<br><br>Greater than or equal to 50 mRem/hr WB or 250 mRem/hr Thyroid for 30 minutes at the site boundary<br><br>**FUEL HANDLING BUILDING**<br><br>• Valid Trip II Alarm on 1EMF17 or 2EMF4<br><br>AND<br><br>Dose rate calculations using unit vent sample analyses and flow rate data equivalent to:<br><br>Greater than or equal to 50 mRem/hr WB or 250 mRem/hr thyroid for 30 minutes at the site boundary<br><br>END | N/A |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. **Earthquake felt in plant and detected by seismic monitoring instruments**<br>◆ Valid Alarm on "strong motion accelerograph"<br>◆ Valid Alarm on "Peak shock annunciator" | 1. **Earthquake greater than OBE**<br>◆ Greater than 0.08 g Horizontal<br>◆ Greater than 0.053 g Vertical | 1. **Earthquake greater than SSE**<br>◆ Greater than 0.15 g Horizontal<br>AND<br>Damage to plant equipment resulting in inability to maintain subcooling greater than 0 degrees F.<br>◆ Greater than 0.10 g Vertical<br>AND<br>Damage to plant equipment resulting in inability to maintain subcooling greater than 0 degrees F. | 1. **Any major natural or accidental event(s) (ie: aircraft impact, earthquakes substantially beyond design levels) which could cause massive common damage to plant systems.**<br>◆ Recovery Manager or Emergency Coordinator judgement.<br>END |
| 2. **Low water level**<br>◆ Lake Norman level less than or equal to 745 ft. | 2. **Damage from tornado, sustained winds, aircraft crash, train derailment, missile, or explosion.**<br>◆ Damage to plant equipment causing the inability to maintain cold shutdown in modes 5 and 6. | 2. **Damage from tornado, severe weather, missile, explosion, aircraft crash, or train derailment causing a loss of functions needed for plant hot shutdown.** | |
| 3. **Any tornado/severe weather within the site boundary.**<br>◆ Tornado observed on site<br>AND<br>Physical damage observed to equipment/structures within the site boundary | 3. **Release of toxic or flammable gas.**<br>◆ Uncontrolled entry of toxic substance or flammable gas into any plant area which jeopardizes the operation of systems needed to maintain cold shutdown in Modes 5 and 6.<br>END | | |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| • Sustained (greater than 15 minutes) winds greater than or equal to 60 mph<br><br>AND<br><br>Physical damage observed to equipment/structures within the site boundary.<br><br>**4. Aircraft crash**<br><br>• Aircraft crash within the site boundary.<br><br>**5. Train derailment on site.**<br><br>• Train derailment resulting in physical damage to equipment/structure within site boundary.<br><br>**6. Explosion within site boundary.**<br><br>• Explosion within the site boundary resulting in structural damage to buildings and/or injuries to personnel. | | • Failure of heat sink results in the inability to maintain Hot Shutdown conditions<br><br>AND<br><br>NC subcooling cannot be maintained greater than 0 degrees F.<br><br>• Inability to feed S/Gs from any source in Modes 1-3.<br><br>AND<br><br>NC subcooling cannot be maintained greater than 0 degrees F.<br><br>**3. Release of toxic or flammable gas (Modes 1-4).**<br><br>• Uncontrolled entry of toxic substances or flammable gas into any plant area which prevents the operation of systems needed to maintain hot shutdown in modes 1-4.<br><br>END | |

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

**7. Release of toxic or flammable gases.**

- Release of toxic gas resulting in personnel injury or any evacuation within the Protected Area.

- Release of flammable gas resulting in any evacuation within the Protected Area.

END

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 1. ECCS initiated.<br>◆ Valid S/I signal verified by redundant indication<br>AND<br>discharge into the vessel<br>2. **Abnormal coolant temperature and/or pressure or abnormal fuel temperature**<br>◆ Figure 2.1-1 Tech Spec exceeded in modes 1 and 2.<br>◆ Core sub-cooling margin less than acceptable ("Subcooling Margin Alert" annunciator).<br>◆ Tech Spec (LCO 2.1.2) Reactor Coolant System pressure exceeded in modes 3, 4, and 5. | 1. **Evacuation of Control Room**<br>◆ Evacuation of Control Room<br>AND<br>Control established (or in process of being established) from the Auxiliary Shutdown Panel<br>◆ Inability to establish control from Auxiliary Shutdown Panel.<br>AND<br>Control established (or in process of being established) from SSF.<br>2. **Significant loss of annunciator capability in Modes 1-4.**<br>◆ Loss of 50% or more of the control room annunciators for greater than 15 minutes in Modes 1-4. | 1. **Evacuation of Control Room**<br>◆ Evacuation of Control Room<br>AND<br>Control cannot be established from the auxiliary shutdown panel or SSF<br>AND<br>NC subcooling cannot be maintained greater than 0 degrees F.<br>◆ Evacuation of Control Room in Modes 1-3<br>AND<br>Inablity to feed S/G's from any source.<br>2. **Other unit conditions exist that in the judgement of the Recovery Manager warrant declaration of site Area Emergency.**<br>END | 1. **Other unit conditions exist, from whatever source, that in the judgement of the Recovery Manager make release of large amounts of radioactivity in a short time period possible.**<br>END |

| NOTIFICATION OF UNUSUAL EVENT | ALERT | SITE AREA EMERGENCY | GENERAL EMERGENCY |
|---|---|---|---|
| 3. **Loss of containment** integrity requiring shutdown by Tech Spec<br><br>◆ Any automatic containment isolation valve open and inoperable and unisolable.<br><br>AND<br><br>◆ Load reduction or plant cooldown initiated pursuant to Tech Spec 3.6.3.<br><br>◆ Both air lock doors of a single airlock inoperable<br><br>AND<br><br>◆ Load reduction or plant cooldown initiated pursuant to Tech Spec 3.6.1.3. | 3. **Other unit conditions exist that in the judgement of the Shift Supervisor/Emergency Coordinator warrant declaration of the Alert classification.**<br><br>END | | |

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

**4. Loss of ESF or Fire Protection System function.**

- Both trains of any ESF system found inoperable (if caused by fire, see event #4.1.7 - Fires and Security Actions, Alert Classification).

AND

Load reduction or plant cooldown initiated in accordance with Tech Specs.

- Less than minimum channels of ESF function inoperable.

AND

Load reduction or plant cooldown initiated in accordance with Tech Specs.

- Loss of all main fire protection system water pumps.

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

**5. Transportation of a contaminated injured individual from the site to an offsite medical facility.**

- Decontamination efforts fail to reduce external contamination below 150 cpm beta-gamma or injured may require immediate medical attention and decontamination efforts are waived.

AND

Radiation Protection personnel determine that radiological controls are required for offsite medical treatment

- Internal contamination requiring medical assessment/treatment

- External exposure requiring medical assessment/treatment

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

**6. Significant Loss of assessment capability or communication capability**

- Loss of MNS communications capability with all offsite agencies

- Loss of 50% or more of the control room annunciators in Modes 5, 6 for greater than 15 minutes.

- Loss of all onsite meteorological instrumentation

AND

Inability to contact the National Weather Service for backup source of data.

**7. Other conditions exist that in the judgement of Shift Supervisor/ Emergency Coordinator warrant increased awareness of local authorities.**

END

# ENGINEERED SAFETY FEATURES

1) Containment Spray
2) Containment Air Return and Hydrogen Skimmer
3) Ice Condenser
4) Hydrogen Control (Hydrogen Recombiners Only)
5) Annulus Ventilation
6) Auxiliary Feedwater
7) Nuclear Service Water
8) Component Cooling
9) Steam Line/Feedwater Line Isolation
10) Containment Pressure Control
11) ESF Interlocks
12) Turbine Trip
13) Reactor Protection System
14) Emergency Diesel Generators
15) Emergency Switchgear
16) Loss of Power Actuation Circuit
17) Emergency Core Cooling System - Safety Injection, Residual Heat Removal, Cold Leg Accumulators, Upper Head Injection, Chemical and Volume Control System, Automatic Switchover
18) Containment Isolation - Phase "A" and Phase "B"