Arkansas Nuclear One - Administrative Services
Document Control
Thursday, May 01, 2003

# Document Update Notification

*COPYHOLDER NO:* **103**

*TO:* **ANO-NRC (EMERGENCY RESPONSE COORD.) - WASHINGTON**

*ADDRESS:* **OS-DOC CNTRL DESK MAIL STOP OP1-17 WASHINGTON DC 20555-DC**

*DOCUMENT NO:* **OP-1903.010**

*TITLE:* **EMERGENCY ACTION LEVEL CLASSIFICATION**

*CHANGE NO:* **037-01-0**

ADDITIONAL INFO:

☒ ← ***If this box is checked, please sign, date, and return within 5 days.***


☐ *ANO-1 Docket 50-313*

☐ *ANO-2 Docket 50-368*

Signature Date

**SIGNATURE CONFIRMS UPDATE HAS BEEN MADE**

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**ATTN: DOCUMENT CONTROL-(N-GSB-67)**
**ARKANSAS NUCLEAR ONE**
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ENTERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE

| TITLE: Emergency Action Level Classificaton<br><br>SET # 103 | DOCUMENT NO.<br>1903.010 | CHANGE NO.<br>037-01-0 |
|---|---|---|
| | WORK PLAN EXP. DATE<br>N/A | TC EXP. DATE<br>N/A |
| | SAFETY-RELATED<br>☒YES ☐NO | IPTE<br>☐YES ☒NO |
| | TEMP ALT<br>☐YES ☒NO | |

| When you see these ***TRAPS*** | Get these ***TOOLS*** |
|---|---|
| Time Pressure | Effective Communication |
| Distraction/Interruption | Questioning Attitude |
| Multiple Tasks | Placekeeping |
| Overconfidence | Self Check |
| Vague or Interpretive Guidance | Peer Check |
| First Shift/Last Shift | Knowledge |
| Peer Pressure | Procedures |
| Change/Off Normal | Job Briefing |
| Physical Environment | Coaching |
| Mental Stress (Home or Work) | Turnover |

| VERIFIED BY | DATE | TIME |
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| FORM TITLE: VERIFICATION COVER SHEET | FORM NO. 1000.006A | CHANGE NO. 050-00-0 |
|---|---|---|

**ENTERGY OPERATIONS INCORPORATED**
**ARKANSAS NUCLEAR ONE**



| TITLE: EMERGENCY ACTION LEVEL CLASSIFICATION | DOCUMENT NO. 1903.010 | CHANGE NO. 037-01-0 |
|---|---|---|

AFFECTED UNIT: ☒ UNIT 1 ☒ UNIT 2 | ☒ PROCEDURE ☐ ELECTRONIC DOCUMENT ☐ WORK PLAN, EXP. DATE _____ | SAFETY-RELATED ☒ YES ☐ NO

TYPE OF CHANGE:
☐ NEW ☒ PC ☐ TC ☐ DELETION
☐ REVISION ☐ EZ EXP. DATE: _____

DOES THIS DOCUMENT:

| | | |
|---|---|---|
| 1. Supersede or replace another procedure? (If YES, complete 1000.006B for deleted procedure.) (0CAN058107) | ☐ YES | ☒ NO |
| 2. Alter or delete an existing regulatory commitment? (If YES, coordinate with Licensing before implementing.) (0CNA128509)(0CAN049803) | ☐ YES | ☒ NO |
| 3. Require a 50.59 review per LI-101? (See also 1000.006, Attachment 15) (If 50.59 evaluation, OSRC review required.) | ☒ YES | ☐ NO |
| 4. Cause the MTCL to be untrue? (See Step 8.5 for details.) (If YES, complete 1000.009A) (1CAN108904, 0CAN099001, 0CNA128509, OCAN049803) | ☐ YES | ☒ NO |
| 5. Create an Intent Change? (If YES, Standard Approval Process required.) | ☐ YES | ☒ NO |
| 6. Implement or change IPTE requirements? (If YES, complete 1000.143A. OSRC review required.) | ☐ YES | ☒ NO |
| 7. Implement or change a Temporary Alteration? (If YES, then OSRC review required.) | ☐ YES | ☒ NO |

Was the Master Electronic File used as the source document? ☒ YES ☐ NO

## INTERIM APPROVAL PROCESS

ORIGINATOR SIGNATURE: (Includes review of Att. 13) DATE:
Print and Sign name: PHONE #:

SUPERVISOR APPROVAL: * DATE:

SRO UNIT ONE :** DATE:

SRO UNIT TWO:** DATE:

Interim approval allowed for non-intent changes requiring no 50.59 evaluation that are stopping work in progress.

Standard Approval required for intent changes or changes requiring a 50.59 evaluation.

*If change not required to support work in progress, Department Head must sign.

**If both units are affected by change, both SRO signatures are required. (SRO signature required for safety related procedures only.)

OSRC CHAIRMAN/TECHNICAL REVIEWER: (0CNA049312) DATE:
RL Fowler Robert L. Fowler 4/22/03

FINAL APPROVAL: Date:
Sherrie R. Cotton 4/23/03

REQUIRED EFFECTIVE DATE: 5/1/03

## STANDARD APPROVAL PROCESS

ORIGINATOR SIGNATURE: (Includes review of Att. 13) DATE: 4/2/2003
Print and Sign name: John Hanson PHONE #: 6878

INDEPENDENT REVIEWER: DATE:
R L Fowler 4/22/03

ENGINEERING: DATE:
N/A

QUALITY: DATE:
N/A

UNIT SURVEILLANCE COORDINATOR (0CNA049803): DATE:
N/A

SECTION LEADER: DATE:
4/22/03

QUALITY ASSURANCE: DATE:
N/A

OTHER SECTION LEADERS: DATE:
Rodney Carter 4/3/2003

OTHER SECTION LEADERS: DATE:
Phil Harris 4-3-03

OTHER SECTION LEADERS: DATE:

OTHER SECTION LEADERS: DATE:

OTHER SECTION LEADERS: DATE:

OTHER SECTION LEADERS: DATE:

OTHER SECTION LEADERS: DATE:

| FORM TITLE: | FORM NO. | CHANGE NO. |
|---|---|---|
| PROCEDURE/WORK PLAN APPROVAL REQUEST | 1000.006B | 051-00-0 |

# ENTERGY OPERATIONS INCORPORATED
# ARKANSAS NUCLEAR ONE

| TITLE:Emergency Action Level Classification | DOCUMENT NO. 1903.010 | CHANGE NO. 037-01-0 |
|---|---|---|

☒PROCEDURE ☐WORK PLAN, EXP. DATE N/A PAGE 1 OF 1

☐ ELECTRONIC DOCUMENT

TYPE OF CHANGE:
☐ NEW ☒ PC ☐ TC ☐ DELETION
☐ REVISION ☐ EZ EXP. DATE:_____

| AFFECTED SECTION: (Include step # if applicable) | DESCRIPTION OF CHANGE: (For each change made, include sufficient detail to describe reason for the change.) |
|---|---|
| Throughout | Modified formatting and renumbered steps as necessary. |
| Page 1 | Removed note referencing Improved Technical Specifications since ITS have been implemented. |
| Page 2 | Added reference 3.1.7, NEI 99-01, Methodology for Development of Emergency Action Levels. |
| Page 7 | Modified definition 4.14, Normal Makeup Capacity. Current definition is inaccurate. |
| Page 8 | Added definition of RCS leakage. |
| Pages 13, 16, 26-29, 81-83 | Added a note containing RCS Leakage definition to Attachments 1 & 2 prior to the listing of the RCS Leakage EALs and to the individual RCS leakage EALs in Attachments 3 ( Unit 1 EALs 2.1-2.4) and 4 (Unit 2 EALs 2.1-2.3). |
| Page 27, 28 | Modified Attachment 3, EAL 2.2 and 2.3 criteria to "RCS Leakage is >50 gpm (Batch Controller capacity is exceeded)." |
| Attachment 3 | Removed "old" Tech Spec modes and left Improved Tech Spec modes where applicable. |
| Pages 34, 87 | Modified Caution to remove ambiguities in utilization of the caution and moved from above criteria to above Related EALs |
| Pages 32-34, 86, 87 | Added "from either or both steam generator(s)" to the on-going steam release portion of Unit 1 EALs 3.3-3.5 and Unit 2 EALs 3.3 & 3.4 to clarify that the source of a steam release is not a factor in determining whether an EAL applies. |
| Pages 32-34 | Added "(other than for normal post trip response)" to "MSSVs maintaining OTSG pressure" |
| Pages 47, 48 | Modified criteria to take credit for a successful Diverse Scram System trip when RPS fails to trip the unit. |
| Pages 127, 128 | Deleted note on Attachments 5 & 6 which referenced Attachments 7 & 8 of 1903.011. Attachments 7 & 8 of1903.011 have been deleted. |

TABLE OF CONTENTS

1.0 PURPOSE

This procedure establishes criteria for detection and classification of plant events into the four standard Emergency Classes.

2.0 SCOPE

This procedure is applicable to Units 1 and 2 in all modes; it does not include specific plant casualty procedures or systems operations requirements, but rather provides administrative processes only.

3.0 REFERENCES

3.1 REFERENCES USED IN PROCEDURE PREPARATION:

3.1.1 ANO Emergency Plan

3.1.2 ANO's EAL Bases Document

3.1.3 NUREG-0654/FEMA-REP-1, Rev. 1

3.1.4 10 CFR 50

3.1.5 NRC Branch Position on Acceptable Deviations to Appendix 1 to NUREG-0654/FEMA-REP-1, July 11, 1994

3.1.6 0CNA080005 - Allow for 1% fuel cladding failure to be determined by radiation dose readings. Step 4.10.1.A.2, 4.10.1.B.2, Attachment 3 EALs 1.2 and 1.3, Attachemnt 4 EALs 1.2 and 1.3, Attachment 7 and 8.

3.1.7 NEI 99-01 - Methodology for Development of Emergency Action Levels

3.2 REFERENCES USED IN CONJUNCTION WITH THIS PROCEDURE:

3.2.1 1000.104, "Condition Reporting and Corrective Actions"

3.2.2 1903.011, "Emergency Response/Notifications"

3.2.3 1903.064, "Emergency Response Facility - Control Room"

3.2.4 1903.065, "Emergency Response Facility - Technical Support Center (TSC)"

3.2.5 1903.066, "Emergency Response Facility - Operational Support Center (OSC)"

3.2.6 1903.067, "Emergency Response Facility - Emergency Operations Facility (EOF)"

3.2.7 1203.025, "Natural Emergencies"

3.2.8 2203.008, "Natural Emergencies"

3.2.9 1202.XXX, "Emergency Operating Procedures"

3.2.10 2202.XXX, "Emergency Operating Procedures"

3.2.11 1404.016, "Post Earthquake Data acquisition and Measurement"

3.2.12 1904.002, "Offsite Dose Projections-RDACS Method"

3.2.13 NRC Position Paper on "Timeliness of Classification of Emergency Conditions" dated August 17, 1995

3.2.14 1607.001, "Reactor Coolant System Sampling"

3.2.15 2607.001, "Unit 2 Reactor Coolant System Sampling"

3.3 RELATED ANO PROCEDURES:

3.3.1 1043.042, "Response to Security Contingencies"

3.3.2 1502.004, Attachment H

3.3.3 1903.023, "Personnel Emergency"

3.3.4 ANO Security Plan/Security Procedures

3.3.5 1015.007, "Fire Brigade Organization and Responsibilities"

3.3.6 1903.042, "Duties of the Emergency Medical Team"

3.3.7 1903.043, "Duties of the Emergency Radiation Team"

3.3.8 1302.022, "Core Damage Assessment"

3.4 REGULATORY CORRESPONDENCE CONTAINING NRC COMMITMENTS WHICH ARE IMPLEMENTED IN THIS PROCEDURE ARE DENOTED IN LEFT HAND MARGIN:

3.4.1 0CAN068320 (P-10766) - Section 4.3

## 4.0 DEFINITIONS

4.1 Core Damage - A failure of fuel cladding integrity to the extent that any of the following happen:

4.1.1 Fission product activity in the coolant exceeds the limits in the technical specifications.

4.1.2 Fuel is no longer in the original geometry.

4.1.3 A major portion of the core cannot be operated for its design cycle length.

4.2 Courtesy Call - A notification to the Arkansas Department of Health and follow-up notification to the NRC for conditions/events other than those constituting an Emergency Class as listed in procedure 1903.11, "Emergency Response/Notifications", Section 6.3.

4.3 Emergency Action Level - Alarms, instrument readings or visual sightings that have exceeded pre-determined limits which would categorize the situation into an initiating condition of one of the following four Emergency Classes:

Notification of Unusual Event
Alert
Site Area Emergency
General Emergency

4.3.1 Notification of Unusual Event - Unusual events are in progress 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.

4.3.2 Alert - Events are in progress 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.

4.3.3 Site Area Emergency - Events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public. Any releases are not expected to exceed EPA Protective Action Guideline exposure levels except near the site boundary.

4.3.4 General Emergency - Events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with the potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off site for more than the immediate site area.

{0CAN068320} 4.4 **Emergency Direction and Control - Overall direction of facility response which must include the non-delegable responsibilities for the decision to notify and to recommend protective actions to Arkansas Department of Health personnel and other authorities responsible for offsite emergency measures. With activation of the EOF, the EOF Director typically assumes the responsibility for Emergency Direction and Control. The management of on-site facility activities to mitigate accident consequences remains with the TSC Director in the Technical Support Center. The Shift Manager retains responsibility for the Control Room and plant systems operation.**

4.5 Emergency Operations Facility (EOF) - A nearsite emergency response facility located approximately 0.65 miles northeast of the reactor buildings (the ANO Training Center).

4.6 Emergency Planning Zone (EPZ) - The EPZ considered by this procedure is the inhalation zone and is that area within approximately a 10 mile radius of ANO.

4.7 Emergency Response Organization (ERO) - The organization which is composed of the Initial Response Staff (IRS), the EOF staff, the TSC staff, the OSC staff, and the Emergency Team members. It has the capability to provide manpower and other resources necessary for immediate and long-term response to an emergency situation.

4.8 EPA Protective Action Guideline (PAG) Exposure Levels - The projected dose to reference man, or other defined individual, from an unplanned release of radioactive material at which a specific protective action to reduce or avoid that dose is recommended (i.e., 1 Rem TEDE or 5 Rem Child Thyroid (CDE)).

4.9 Exclusion Area: That area surrounding ANO within a minimum radius of 0.65 miles of the reactor buildings, but outside the protected area and controlled to the extent necessary by ANO during periods of emergency.

4.10 FISSION PRODUCT BARRIER FAILURE

4.10.1 **Fuel Cladding Failure** - Condition where the fuel rod cladding becomes defective and cannot contain the fission gases that have accumulated between the fuel pellet and the fuel rod cladding (commonly referred to as the gap).

A. Unit 1 - Greater than 1% fuel cladding failure as indicated by ANY of the following:

1. Nuclear Chemistry analysis of RCS sample yields > 400 uCi/gm specific I-131.

2. Radiation levels that indicate >1% fuel cladding failure per Unit 1 Fuel Cladding Failure Radiation Plot (Att 7).

3. Failed Fuel Iodine process monitor (RE 1237S) indicates > $8.2 \times 10^5$ CPM.

4. Containment Radiation Levels correspond to a Site Area Emergency from Containment Radiation EAL Plot (Attachment 5).

5. Engineering assessment of core damage indicates >1% fuel cladding failure.

B. Unit 2 - Greater than 1% fuel cladding failure as indicated by ANY of the following:

1. Nuclear Chemistry analysis of RCS sample yields > 378 uCi/gm specific I-131.

2. Radiation levels that indicate >1% fuel cladding failure per Unit 2 Fuel Cladding Failure Radiation Plot (Att 8).]

3. Containment Radiation Levels correspond to a Site Area Emergency from Containment Radiation EAL Plot (Attachment 6).

(4.10.1 cont.)

4. Engineering assessment of core damage indicates > 1% fuel cladding failure.

4.10.2 **RCS Boundary Failure**

A. Unit 1 - RCS leakage greater than normal makeup capacity (50 gpm).

B. Unit 2 - RCS leakage greater than 44 gpm (capacity of a single Charging Pump).

4.10.3 **Containment Integrity Failure**

A. Abnormally high Containment High Range Radiation Monitor readings (RE-8060 or 8061 for Unit 1; 2RY-8925-1 or 2RY-8925-2 for Unit 2) and indications of radiological effluents outside of the Reactor Building that are not attributable to any other source.

B. In the judgement of the SM/TSC Director/EOF Director, a breach of the Reactor Building exists. The variety of possible Reactor Building integrity failure scenarios precludes the development of an all inclusive list. In the absence of the conditions described in 4.10.3.A above, the SM/TSC Director/EOF Director must judge the potential for an offsite release to occur based on a current status of Reactor Building isolation systems and structural integrity.

4.10.4 **Inability to Monitor a Fission Product Barrier**

A. Following the failure of two fission product barriers, the inability to monitor the third barrier is to be regarded as equivalent to a failure of that barrier.

4.11 FISSION PRODUCT BARRIER CHALLENGE

4.11.1 **Challenge to Fuel Cladding**: any event or condition which in the judgement of the SM/TSC Director/EOF Director presents the potential for greater than 1% fuel cladding failure; for example:

A. RCS temperature and pressure indicates superheated conditions.

B. Indications of the core being uncovered.

C. Exceeding safety limits (e.g. DNBR or Local Power Distribution)

4.11.2 **Challenge to RCS Boundary**: any event or condition which, in the judgement of the SM/TSC Director/EOF Director could result in RCS leakage in excess of normal makeup capacity (i.e., 50 gpm for Unit 1 or 44 gpm for Unit 2); for example:

A. RCS pressure > 2450 psig and not decreasing.

B. Two out of three seal stages failed on any RCP (U-1).

(4.11.2 cont.) C. Three out of four seal stages failed on any RCP (U-2).

D. Failure of any component resulting in RCS leakage greater than Tech. Spec. limits and approaching normal make up capacity; (50 gpm) for Unit 1 or (44 gpm) for Unit 2.

4.11.3 **Challenge to Containment Building Integrity**: any event or condition which in the judgement of the SM/TSC Director/ EOF Director significantly increases the potential for failure of containment integrity; for example:

A. Containment pressure > Reactor Building spray actuation setpoint and increasing with no available RB spray or cooling.

B. Hydrogen concentrations in containment > 3.5%.

C. Occurrence of system or component failure which degrades the capability to maintain containment integrity as defined by Technical Specifications.

4.12 Fuel Overheat - Condition in which fission products trapped within the fuel pellet are released at an accelerated rate due to increasing temperature. Fuel overheating tempertures typically range from 1600 °F to 3600 °F cladding temperature.

4.13 Initial Response Staff (IRS) - The emergency organization composed of plant personnel which must be able to respond to the site in accordance with Table B-1 of the Emergency Plan.

4.14 Normal Makeup (MU) Capacity

Unit 1: Normal makeup capacity is defined as 50 gpm. 50 gpm approximates a leak size for which the ability to make additions to the makeup tank is no longer adequate to maintain makeup tank level.

Unit 2: Normal makeup capacity is defined as 44 gpm. 44 gpm is the capacity of a single charging pump.

4.15 Offsite - Those areas not covered by Section 4.13.

4.16 Onsite - The area within the Exclusion Area Boundary.

4.17 Operational Support Center (OSC) - Emergency response center within the ANO Maintenance Facility where support is coordinated for the following functions:

Onsite Radiological Monitoring
Maintenance
Nuclear Chemistry
Emergency Medical Support
Fire Fighting Support

The OSC also serves as the briefing area for repair and damage control teams and is located in the Maintenance Facility.

4.18 PLANT TRANSIENT

4.18.1 Any unplanned reactor trip from criticality.

4.18.2 A planned reactor trip in which the expected post-trip response did not occur.

4.18.3 Any event resulting in an automatic ESAS (Unit 1) or ESF (Unit 2) actuation or any event requiring manual initiation of these systems where automatic initiation would likely have occurred.

4.18.4 Any turbine-generator power change in excess of 100 MWe in less than one (1) minute other than a momentary spike due to a grid disturbance or a manually initiated runback.

4.18.5 Any unplanned main turbine or main feedwater pump turbine trip which results in a significant plant transient (change in excess of 100 MWe).

4.19 Protected Area: The area encompassed by physical barriers (i.e., the security fence) and to which access is controlled.

4.20 Reactor Coolant System (RCS) Leakage: Loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

4.21 Technical Support Center (TSC) - The location within the ANO Administration Building equipped with instrumentation and communication systems and facilities useful in monitoring the course of an accident; this center is located in the 3rd Floor of the ANO Administration Building.

5.0 RESPONSIBILITY AND AUTHORITY

5.1 The responsibility for event classification is assigned to the individual with responsibility for Emergency Direction and Control (i.e., The Shift Manager, TSC Director, or EOF Director).

5.2 The Control Room Supervisor (CRS) will assume Emergency Direction and Control responsibilities whenever the SM is not available to assume this responsibility (e.g. the SM becomes incapacitated and a replacement has not yet arrived).

5.3 Any individual who observes an initiating condition which warrants an emergency class declaration, as described in Attachments 3 and 4, shall immediately notify the person with current responsibility for Emergency Direction and Control (i.e. SM/TSC Director/EOF Director).

6.0 INSTRUCTIONS

**NOTE**

On emergencies that effect both units such as earthquakes, tornado's, etc., the unit with the highest Emergency Action Level Classification should be the one that is declaring the emergency.

6.1 CLASSIFYING EMERGENCIES:

**NOTE**

NRC guidelines recommend that once indications are available to ANO staff that an EAL has been exceeded, a 15 minute goal is a reasonable period of time for assessing and classifying an emergency.

6.1.1 When indications of abnormal occurrences are received by the Control Room staff, the SM/TSC Director/EOF Director shall:

A. Verify the indications of the off-normal event or reported sighting.

B. Ensure that the immediate actions (e.g., use of Emergency and Abnormal Operating Procedures) are taken for the safe and proper operation of the plant.

C. Compare the abnormal conditions with those listed in the "Index Of Emergency Action Levels" (Blue Tabs - Unit 1; Green Tabs - Unit 2).

D. Turn to the appropriate tab which corresponds to the condition picked from the Index Of EALs.

**NOTE**

Unit 1 EALs - Blue Tabs
Unit 2 EALs - Green Tabs

E. Assess the information available from valid indications or reports, then:

1. Compare information to criteria given for EAL,

2. Review any Related EALs to determine if the abnormal conditions meet those criteria, and

3. Declare the emergency classification that is indicated. If it appears that different classifications could be made for the current plant conditions, the highest classification indicated should be the one that is declared.

**NOTE**

The emergency action levels described in this procedure are not intended to be used during maintenance and/or testing situations where abnormal temperature, pressure, equipment status, etc., is expected. In addition, each EAL contains information on the mode(s) of operation during which it is applicable.

F. If the indications or reports do not match the given EALs, then refer to the Miscellaneous Tab and using appropriate judgement, determine if the plant status warrants an emergency declaration.

6.1.2 Due to the speed in which events sometimes progress and the duty of the plant operators to take immediate corrective actions, an event may occur which was classifiable as an emergency, however, prior to offsite notifications the corrective actions taken may have removed the conditions that would have resulted in an emergency declaration. In this situation, it is not necessary to make an actual declaration of the emergency class, but an ENS notification to the NRC within one hour of the discovery of the undeclared event will provide an acceptable alternative. A courtesy call shall be made to ADH. Subsequent activation of response organization should be based upon the current plant conditions.

6.1.3 If no emergency declaration is required, then refer to procedure 1903.011, "Emergency Response/Notifications", Section 6.3 to determine if the event warrants a "For Information Only" notification to Entergy Management, NRC Resident Inspector and/or the Arkansas Department of Health.

6.1.4 Upon declaration of an emergency classification implement procedure, 1903.011, "Emergency Response Notifications", to ensure that immediate notification requirements are met and the proper Emergency Plan response is taken.

6.1.5 Upgrade the emergency classification if plant conditions degrade per steps 6.1.1.A through F.

6.1.6 Downgrade the emergency classification when plant conditions have improved and step 6.2 is applicable.

6.2 DOWNGRADING THE EMERGENCY CLASSIFICATION:

6.2.1 Assess the current plant conditions, then perform the following:

A. Compare the abnormal conditions with those listed in the "Index Of Emergency Action Levels" (Blue Tabs - Unit 1; Green Tabs - Unit 2).

B. Turn to the appropriate tab which corresponds to the condition picked from the Index Of EALs.

**NOTE**
Unit 1 EALs - Blue Tabs
Unit 2 EALs - Green Tabs

C. Assess the information available from valid indications or reports, compare it to the given EALs. Obtain concurrence from NRC and State officials that downgrading is appropriate (if their emergency response organizations have been activated as a result of this event). Downgrade to the emergency classification that is indicated.

D. If the indications or reports do not match the given EALs, then refer to the Miscellaneous Tab and using appropriate judgement, determine if the plant status warrants downgrading the emergency classification.

6.2.2 Perform notifications to downgrade the emergency classification if appropriate per procedure 1903.011, "Emergency Response/Notifications".

6.2.3 If no emergency classification appears necessary, then terminate the emergency per step 6.3.

6.2.4 If the emergency classification is still required, repeat steps 6.2.1 through 6.2.3 whenever plant conditions again appear to have improved.

6.3 TERMINATING THE EMERGENCY:

6.3.1 Compare the existing plant conditions with the following:

A. Plant conditions no longer meet the emergency action level criteria AND it appears unlikely that current conditions will degrade further requiring reinstitution of an emergency classification.

B. Non-routine releases of radioactive material to the environment are under control or terminated.

C. Any fire, flood, earthquake, or similar emergency condition is controlled or has ceased.

D. All specified corrective actions have occurred OR the plant has been placed in the appropriate operational mode.

E. All required notifications have been completed.

F. NRC and State officials are in agreement that termination or transition to the recovery phase is appropriate (if their emergency response organizations have been activated as a result of this event).

6.3.2 If the conditions of 6.3.1 A-F are met, terminate the emergency or proceed to the recovery phase.

7.0 ATTACHMENTS AND FORMS

7.1 Attachment 1 - Unit 1 Index of EALs

7.2 Attachment 2 - Unit 2 Index of EALs

7.3 Attachment 3 - Unit 1 Emergency Action Levels

7.4 Attachment 4 - Unit 2 Emergency Action Levels

7.5 Attachment 5 - Unit 1 Containment Radiation EAL Plot

7.6 Attachment 6 - Unit 2 Containment Radiation EAL Plot

7.7 Attachment 7 - Unit 1 Fuel Cladding Failure Radiation Plot

7.8 Attachment 8 - Unit 2 Fuel Cladding Failure Radiation Plot

ATTACHMENT 1
UNIT 1
INDEX OF EALS

**NOTE**

Once available plant parameters reach an Emergency Action Level (EAL), classifications should be made within 15 minutes.

1.0 PRIMARY SYSTEM EVENTS

| | | |
|---|---|---|
| 1.1 | RCS Activity Indicates >0.1% Fuel Cladding Failure | NUE |
| 1.2 | RCS Activity Indicates > 1% Fuel Cladding Failure | ALERT |
| 1.3 | Core Damage Indicated with an Inadequate Core Cooling Condition | SAE |
| 1.4 | Containment Radiation Reading which Indicates LOCA and >1% Fuel Cladding Failure | SAE |
| 1.5 | Containment Radiation Reading which Indicates LOCA and >50% Fuel Overheat | GE |
| 1.6 | Core Melt | GE |
| 1.7 | Loss of or challenge to all 3 Fission Product Barriers | GE |

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

2.0 RCS LEAKAGE

| | | |
|---|---|---|
| 2.1 | RCS Leakage | NUE |
| 2.2 | RCS Leakage > Normal Makeup Capacity (50 gpm) | ALERT |
| 2.3 | RCS Leakage > Normal Makeup Capacity (50 gpm) with >1.0% Fuel Cladding Failure Conditions | SAE |
| 2.4 | RCS Leakage > HPI Capacity | SAE |

3.0 SECONDARY SYSTEM EVENTS

| | | |
|---|---|---|
| 3.1 | Uncontrolled OTSG Depressurization Resulting in MSLI Actuation | NUE |
| 3.2 | OTSG Tube Leak $\geq$ Tech Spec limits | NUE |
| 3.3 | OTSG Tube Leak >10gpm Concurrent with an On-going Steam Release,or loss of offsite power | ALERT |
| 3.4 | OTSG Tube Rupture with Primary to Secondary Leakage > Normal Makeup Capacity (50 gpm) with ongoing steam release or loss of offsite power | SAE |
| 3.5 | OTSG Tube Leak >1 gpm with >1% Fuel Cladding Failure and on-going Steam Release | SAE |

4.0 ELECTRICAL POWER FAILURES

| | | |
|---|---|---|
| 4.1 | Degraded Power | NUE |
| 4.2 | Station Blackout | ALERT |
| 4.3 | Blackout for more than 15 minutes | SAE |
| 4.4 | Loss of All Vital DC Power | ALERT |
| 4.5 | Loss of All Vital DC Power for more than 15 minutes | SAE |

ATTACHMENT 1
UNIT 1
INDEX OF EALS

**NOTE**

Once available plant parameters reach an Emergency Action Level (EAL), classifications should be made within 15 minutes.

5.0 RADIOLOGICAL EFFLUENTS

| | | |
|---|---|---|
| 5.1 | Radiological Effluents ≥.05 mRem/hr TEDE or .15 mRem/hr Child Thyroid CDE at Site Boundary or Liquid Radiological Effluents exceed ODCM Limitations | NUE |
| 5.2 | Radiological Effluents ≥.5 mRem/hr TEDE or 1.5 mRem/hr Child Thyroid CDE at Site Boundary or Liquid Radiological Effluents exceed 10 times ODCM Limitations | ALERT |
| 5.3 | Radiological Effluents ≥50 mRem/hr TEDE or 150 mRem/hr Child Thyroid CDE at the Site Boundary | SAE |
| 5.4 | Radiological Effluents ≥250 mRem/hr TEDE or 500 mRem/hr Child Thyroid CDE at the Site Boundary | GE |
| 5.5 | High Radiation/Airborne Levels | ALERT |
| 5.6 | Spent Fuel Accident | SAE |

6.0 SAFETY SYSTEM FUNCTION

| | | |
|---|---|---|
| 6.1 | Deviation from T.S. action statements when required to shutdown or cooldown or deviations pursuant to 10CFR50.54(x) | NUE |
| 6.2 | RPS Failure to Complete an Automatic Trip | ALERT |
| 6.3 | RPS Failure to Complete a Manual Trip | SAE |
| 6.4 | Loss of Dose Assessment Capabilities | NUE |
| 6.5 | Loss of Communications | NUE |
| 6.6 | Loss of Control Room Annunciators | ALERT |
| 6.7 | Loss of Control Room Annunciators with Transient in Progress | SAE |
| 6.8 | Control Room Evacuation | ALERT |
| 6.9 | Control Room Evacuation and control of shutdown systems not established in 15 minutes | SAE |
| 6.10 | Loss of Decay Heat Removal Systems | ALERT |
| 6.11 | Degraded Hot Shutdown Capability | SAE |

ATTACHMENT 1
UNIT 1
INDEX OF EALS

**NOTE**

Once available plant parameters reach an Emergency Action Level (EAL), classifications should be made within 15 minutes.

ATTACHMENT 2
UNIT 2
INDEX OF EALS

**NOTE**

Once available plant parameters reach an Emergency Action Level (EAL), classifications should be made within 15 minutes.

1.0 PRIMARY SYSTEM EVENTS

| | | |
|---|---|---|
| 1.1 | RCS Activity Indicates >0.1% Fuel Cladding Failure | NUE |
| 1.2 | RCS Activity Indicates >1.0% Fuel Cladding Failure | ALERT |
| 1.3 | Core Damage Indicated with an Inadequate Core Cooling Condition | SAE |
| 1.4 | Containment Radiation Indicates LOCA and >1% Fuel Cladding Failure | SAE |
| 1.5 | Containment Radiation Indicates LOCA and >50% Fuel Overheat | GE |
| 1.6 | Core Melt with Containment Integrity Lost or Challenged | GE |
| 1.7 | Loss of or challenge to all 3 Fission Product Barriers | GE |

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

2.0 RCS LEAKAGE

| | | |
|---|---|---|
| 2.1 | RCS Leakage | NUE |
| 2.2 | RCS Leakage > 44 gpm | ALERT |
| 2.3 | RCS Leakage > 44 gpm with ICC Conditions | SAE |

3.0 SECONDARY SYSTEM EVENTS

| | | |
|---|---|---|
| 3.1 | Uncontrolled S/G Depressurization Resulting in MSIS Actuation | NUE |
| 3.2 | S/G Tube Leak > Tech. Spec. Limits | NUE |
| 3.3 | S/G Tube Leak >10gpm with an Ongoing Steam Release | ALERT |
| 3.4 | S/G Tube Rupture >44 gpm With an Ongoing Steam Release and RCS Activity > 1.0 µCi/gm, but < 378 µci/gm (1% fuel cladding failure) | SAE |

4.0 ELECTRICAL POWER FAILURES

| | | |
|---|---|---|
| 4.1 | Degraded Power | NUE |
| 4.2 | Station Blackout | ALERT |
| 4.3 | Loss of All Vital DC | ALERT |
| 4.4 | Blackout > 15 minutes | SAE |
| 4.5 | Loss of All Vital DC for > 15 minutes | SAE |

ATTACHMENT 2
UNIT 2
INDEX OF EALS

**NOTE**

Once available plant parameters reach an Emergency Action Level (EAL), classifications should be made within 15 minutes.

5.0 RADIOLOGICAL EFFLUENTS



6.0 SAFETY SYSTEM FUNCTION

ATTACHMENT 2
UNIT 2
INDEX OF EALS

**NOTE**

Once available plant parameters reach an Emergency Action Level (EAL), classifications should be made within 15 minutes.

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.1

CONDITION:

RCS Activity indicates >0.1% fuel cladding failure

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Greater than 0.1% fuel cladding failure as indicated by EITHER of the following:

   A. Nuclear Chemistry analysis of RCS sample yields >40.0 µCi/gm specific I-131

   OR

   B. Failed Fuel Iodine monitor (RE 1237S) indicates >3.3 x $10^5$ CPM

RELATED EALS:

| | TAB |
|---|---|
| RCS Activity indicates >1% fuel cladding failure | 1 |
| High Radiation / Airborne Levels | 5 |
| Initiation of Plant S/D or C/D due to T.S. L.C.O. | 6 |

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.2

CONDITION:

RCS Activity indicates >1% fuel cladding failure

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Greater than 1% fuel cladding failure is indicated by Either of the following:

   A. Nuclear Chemistry analysis of RCS sample yields:

      1. >400 µCi/gm specific I-131

      OR

      2. Radiation levels that indicate >1% fuel cladding failure per Unit 1 Fuel Cladding Failure Radiation Plot (Att 7)

      OR

   B. Failed Fuel Iodine monitor (RE 1237S) indicates >8.2 x $10^5$ CPM.

RELATED EALS:

| | TAB |
|---|---|
| RCS Activity indicates >0.1% fuel cladding failure | 1 |
| Containment Radiation indicates LOCA and >1% fuel cladding failure | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Damage indicated with an ICC Condition | 1 |
| High Radiation/Airborne Levels | 5 |
| Initiation of Plant S/D or C/D due to T.S. L.C.O. | 6 |

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.3

CONDITION:

Core Damage Indicated with an Inadequate Core Cooling Condition

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Inadequate core cooling capacity exists as evidenced by CETS indicating superheated conditions of Region 3 of Figure 4 of EOP 1202.013.

AND

2. Greater than 1% fuel cladding failure is indicated by EITHER of the following:

   A. Nuclear Chemistry analysis of RCS sample yields:

      1. >400 µCi/gm specific I-131

      OR

      2. Radiation levels that indicate >1% fuel cladding failure per Unit 1 Fuel Cladding Failure Radiation Plot (Att 7)

   OR

   B. Failed Fuel Iodine process monitor (RE 1237S) indicates >8.2 x $10^5$ CPM.

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation High/Very High | 1 |
| Core Melt | 1 |
| Loss of or challenge to 3 Fission Product Barriers | 1 |
| RCS Leakage | 2 |

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.4

CONDITION:

Containment Radiation reading which indicates LOCA and >1% fuel cladding failure

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Containment Radiation Levels correspond to a Site Area Emergency as Determined from the Containment Radiation EAL Plot (Att 5)

AND

2. LOCA occurring within the containment building

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation indicates LOCA and > 50% fuel overheat | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Melt | 1 |
| Radiological Effluents | 5 |

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.5

CONDITION:

Containment Radiation readings which indicate LOCA and >50% fuel overheat

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. Containment Radiation Levels correspond to a General Emergency as determined from the Containment Radiation EAL Plot (Att 5)

AND

2. LOCA occurring within the Containment Building

RELATED EALS:

| | TAB |
|---|---|
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Radiological Effluents | 5 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.6

CONDITION:

Core Melt

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. CETs indicate superheat conditions of Region 4 of Figure 4 of EOP 1202.013.

RELATED EALS:

| | TAB |
|---|---|
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Containment Radiation High/Very High | 1 |
| Radiological Effluents | 5 |

ATTACHMENT 3
UNIT 1
PRIMARY SYSTEM EVENTS

1.7

CONDITION:

Loss of or challenge to all 3 Fission Product Barriers

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. Either of the following conditions exist:

   A. Fuel Cladding Failure (refer to section 4.10.1)
   B. Challenge to Fuel Cladding (refer to section 4.11.1)

AND

2. Either of the following conditions exist:

   A. RCS boundary failure (refer to section 4.10.2)
   B. Challenge to RCS boundary (refer to section 4.11.2)

AND

3. Either of the following conditions exist:

   A. Containment Integrity failure (refer to section 4.10.3)
   B. Challenge to Containment Integrity (refer to section 4.11.3)

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation High/Very High | 1 |
| Core Melt | 1 |
| Radiological Effluents | 5 |
| Natural Events | 8 |

ATTACHMENT 3
UNIT 1
RCS LEAKAGE

2.1

CONDITION:

RCS Leakage

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. Unidentified or pressure boundary RCS leakage greater than 10 gpm.

OR

2. Identified RCS leakage greater than 25 gpm.

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage > Normal Makeup Capacity (50 gpm) | 2 |
| TS LCO's | 6 |
| OTSG Tube Leak | 3 |

ATTACHMENT 3
UNIT 1
RCS LEAKAGE

2.2

CONDITION:

RCS Leakage > Normal Makeup Capacity (50 gpm)

EMERGENCY CLASSIFICATION:

Alert

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. RCS Leakage is >50 gpm (Batch Controller capacity is exceeded).

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage > Normal M/U Capacity with Fuel Clad Failure Conditions | 2 |
| RCS Leakage > HPI Capacity | 2 |
| Containment Radiation High/Very High | 1 |
| Core Damage Indicated with an ICC Condition | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Radiological Effluents | 5 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
RCS LEAKAGE

2.3

CONDITION:

RCS Leakage > Normal Makeup Capacity (50 gpm) with >1.0% Fuel Cladding Failure Conditions

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. RCS Leakage is >50 gpm (Batch Controller capacity is exceeded) with ≥1.0% Fuel Cladding Failure in the RCS (EAL 1.2)

**NOTE**

EAL 2.2 RCS Leakage > Normal Makeup Capacity (50 gpm)
EAL 1.2 RCS Activity Indicates >1% fuel cladding failure

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation indicates LOCA and fuel failure | 1 |
| Core Damage Indicated with an ICC Condition | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Radiological Effluents | 5 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
RCS LEAKAGE

2.4

CONDITION:

RCS Leakage > HPI Capacity

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. RCS Leakage > HPI Capacity as indicated by:

   A. Full available HPI being injected into the core

   AND

   B. RCS Pressure/Pressurizer Level continues to decrease or RCS Subcooling margin remains inadequate with no indication of recovery.

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation High/Very High | 1 |
| Core Damage Indicated with an ICC Condition | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Radiological Effluents | 5 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
SECONDARY SYSTEM EVENTS

3.1

CONDITION:

Uncontrolled OTSG Depressurization Resulting in MSLI Actuation

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

1. Any manual or automatic actuation of MSLI due to uncontrolled OTSG depressurization.

| RELATED EALS: | TAB |
|---|---|
| OTSG Tube Leak | 3 |
| Radiological Effluents | 5 |

ATTACHMENT 3
UNIT 1
SECONDARY SYSTEM EVENTS

3.2

CONDITION:

OTSG Tube Leakage ≥ Tech. Spec. Limits

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

1. RCS Leak rate of ≥ 150 gallons per day (.104 gpm), coincident with one or more of the following:

   a) Main Steam line N-16 alarm(s)
   b) Steam Line High Range RAD Monitors Increase (RI-2681 or 2682)
   c) Condenser off gas process monitor count rate increase
   d) Nuclear Chemistry sample indicating Primary-Secondary tube leak

| RELATED EALS: | TAB |
|---|---|
| OTSG Tube Leak | 3 |
| RCS Leakage | 2 |
| Radiological Effluents | 5 |

ATTACHMENT 3
UNIT 1
SECONDARY SYSTEM EVENTS

3.3

CONDITION:

OTSG Tube Leakage > 10 gpm concurrent with ongoing steam release or loss of offsite power.

EMERGENCY CLASSIFICATION:

Alert

MODES 1-4

CRITERIA:

1. RCS Leakrate increase of >10 gpm, coincident with one of more of the following:

   a. Main Steam line N-16 alarms(s)
   b. Condenser Off Gas Process Monitor count rate increase
   c. Steam Line High Range Rad Monitors increase (RI-2681 or RI-2682)
   d. Nuclear Chemistry sample indicating primary-secondary tube leak

AND

2. ANY of the following occur:

   A. Loss of offsite power
   B. Steam release to the environment from either or both steam generator(s) indicated by:

      1. Main Steam Safety Valve(s) maintaining OTSG pressure (other than for normal post trip response)
      2. Use of ADV(s) to control OTSG pressure
      3. P7A is in use and continued operation required to maintain OTSG levels
      4. Steam line break outside containment

RELATED EALS:

| | TAB |
|---|---|
| OTSG Tube Rupture >50 gpm with ongoing steam release | 3 |
| OTSG Tube Leak with fuel cladding failure | 3 |
| RCS Leakage | 2 |
| Radiological Effluents | 5 |
| High Radiation/Airborne Levels | 5 |
| Electrical Power Failures | 4 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |

ATTACHMENT 3
UNIT 1
SECONDARY SYSTEM EVENTS

3.4

CONDITION:

OTSG Tube Rupture with primary to secondary leakage >normal makeup capacity (50 gpm) with ongoing steam release or loss of offsite power.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. OTSG Tube Rupture as indicated by BOTH of the following:

   A. RCS Leakage > Normal Makeup Capacity (50 gpm)

   B. Coincident with one or more of the following:

      a) Main Steam line N-16 alarm(s)
      b) Steam Line High Range RAD Monitors Increase (RI-2681 or 2682)
      c) Condenser off gas process monitor count rate increase
      d) Nuclear Chemistry sample indicating Primary-Secondary tube leak

AND

2. ANY of the following occur:

   A. Loss of offsite power
   B. Steam release to the environment from either or both steam generator(s) indicated by:

      1. Main Steam Safety Valve(s) maintaining OTSG pressure (other than for normal post trip response)
      2. Use of ADV(s) to control OTSG pressure
      3. P7A is in use and continued operation required to maintain OTSG levels
      4. Steam line break outside containment

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage | 2 |
| Radiological Effluents | 5 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Electrical Power Failures | 4 |

ATTACHMENT 3
UNIT 1
SECONDARY SYSTEM EVENTS

3.5

CONDITION:

OTSG Tube Leak >1 gpm with >1% fuel cladding failure with ongoing steam release

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. OTSG Leakrate increase of ≥1 gpm, coincident with one or more of the following:

   a) Main Steam line N-16 alarm(s)
   b) Steam Line High Range RAD Monitors Increase (RI-2681 or 2682)
   c) Condenser off gas process monitor count rate increase
   d) Nuclear Chemistry sample indicating Primary-Secondary tube leak

AND

2. Greater than 1% fuel cladding failure indicated in the RCS (EAL 1.2)

AND

3. ANY of the following occur:

   A. Loss of offsite power
   B. Steam release to the environment from either or both steam generator(s) indicated by:

      1. Main Steam Safety Valve(s) maintaining OTSG pressure (other than for normal post trip response)
      2. Use of ADV(s) to control OTSG pressure
      3. P7A is in use and continued operation required to maintain OTSG levels
      4. Steam line break outside containment

RELATED EALS:

**CAUTION**

If RCS leakage is ≥ 50 gpm, EAL 1.7 will apply. If RCS leakage is degrading and approaching 50 gpm **consider** EAL 1.7.

| | TAB |
|---|---|
| RCS Leakage | 2 |
| Radiological Effluents | 5 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Electrical Power Failures | 4 |

ATTACHMENT 3
UNIT 1
ELECTRICAL POWER FAILURES

4.1

CONDITION:

Degraded Power

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Only Diesel Generator (Station Blackout Diesel or Emergency Diesel) power is available to 4160V Buses (A3 and/or A4).

AND

2. No voltage indicated on 6.9 KV AND 4.16 KV nonvital buses (H1, H2, A1, and A2)

RELATED EALS:

| | TAB |
|---|---|
| Blackout | 4 |
| OTSG Tube Leak | 3 |

ATTACHMENT 3
UNIT 1
ELECTRICAL POWER FAILURES

4.2

CONDITION:

Station Blackout

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. All 4160V buses de-energized.

RELATED EALS:

| | TAB |
|---|---|
| Blackout more than 15 minutes | 4 |
| Loss of Control Room Annunciators | 6 |

ATTACHMENT 3
UNIT 1
ELECTRICAL POWER FAILURES

4.3

CONDITION:

Blackout for more than 15 minutes.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. All 4160V buses de-energized for greater than 15 minutes.

RELATED EALS:

| | TAB |
|---|---|
| Electrical Power Failures | 4 |
| Loss of Control Room Annunciators | 6 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
ELECTRICAL POWER FAILURES

4.4

CONDITION:

Loss of All Vital DC Power

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Loss of voltage on ALL of the following busses

   A. D01 and D02
   B. RA1 and RA2
   C. D11 and D21

RELATED EALS:

| | TAB |
|---|---|
| Loss of All Vital DC Power for more than 15 minutes | 4 |
| Loss of Control Room Annunciators | 6 |

ATTACHMENT 3
UNIT 1
ELECTRICAL POWER FAILURES

4.5

CONDITION:

Loss of All Vital DC Power for more than 15 minutes

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Loss of voltage on ALL of the following busses

   A. D01 and D02
   B. RA1 and RA2
   C. D11 and D21

AND

2. DC power is not restored within 15 minutes

RELATED EALS:

| | TAB |
|---|---|
| Electrical Power Failures | 4 |
| Loss of Control Room Annunciators | 6 |

ATTACHMENT 3
UNIT 1
RADIOLOGICAL EFFLUENTS

5.1

CONDITION:

Projected or measured activity at the Site Boundary, averaged over one hour, is greater than or equal to 0.05 mrem/hr TEDE or 0.15 mrem/hr Child Thyroid CDE or Liquid radiological effluents exceed ODCM Limitations.

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected activity at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 0.05 mrem/hr TEDE or 0.15 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report activity at the Site Boundary which, when averaged over the previous one hour, exceeds 0.05 mrem/hr TEDE or 0.15 mrem/hr Child Thyroid CDE.

   OR

   C. Liquid radiological effluents exceed ODCM Limitations.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| High Radiation/Airborne Levels | 5 |
| OTSG Tube Leak | 3 |

ATTACHMENT 3
UNIT 1
RADIOLOGICAL EFFLUENTS

5.2

CONDITION:

Projected or measured activity at the Site Boundary, averaged over one hour, is greater than or equal to 0.5 mrem/hr TEDE or 1.5 mrem/hr Child Thyroid CDE or Liquid radiological effluents exceed 10 times ODCM Limitations.

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected activity at the Site Boundary, as calculated by the RDACS method, indicates greater than or equal to 0.5 mrem/hr TEDE or 1.5 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report activity at the Site Boundary which, when averaged over the previous one hour, exceeds 0.5 mrem/hr TEDE or 1.5 mrem/hr Child Thyroid CDE.

   OR

   C. Liquid radiological effluents exceed 10 times ODCM Limitations.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| OTSG Tube Leak | 3 |
| Containment Radiation High | 1 |

ATTACHMENT 3
UNIT 1
RADIOLOGICAL EFFLUENTS

5.3

CONDITION:

Radiological Effluents are greater than or equal to 50 mrem/hr TEDE or 150 mrem/hr Child Thyroid CDE at the Site Boundary.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected dose rates at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 50 mrem/hr TEDE or 150 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report dose rates at the Site Boundary are greater than or equal to 50 mrem/hr TEDE or 150 mrem/hr Child Thyroid CDE.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| Containment Radiation High / Very High | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
RADIOLOGICAL EFFLUENTS

5.4

CONDITION:

Radiological Effluents are greater than or equal to 250 mrem/hr TEDE or 500 mrem/hr Child Thyroid CDE at the Site Boundary.

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected dose rates at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 250 mrem/hr TEDE or 500 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report dose rates at the Site Boundary are greater than or equal to 250 mrem/hr TEDE or 500 mrem/hr Child Thyroid CDE.

RELATED EALS:

| | TAB |
|---|---|
| Core Melt | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Containment Radiation High / Very High | 1 |

ATTACHMENT 3
UNIT 1
RADIOLOGICAL EFFLUENTS

5.5

CONDITION:

High Radiation/Airborne Levels

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. The loss of control of radioactive material results in ANY of the following:

   A. Containment radiation indicates >2R/hr

   B. Area Radiation levels in controlled access (excluding containment) increase by 1 Rem/hr at 2 or more locations.

   C. General area radiation levels outside of radiologically controlled areas increase by 10 mRem/hr.

   D. Airborne levels as follows:

   - Auxiliary Building ≥100 DAC (General Area)
   - Turbine Building ≥10 DAC

NOTE: "Loss of Control" shall be defined as: ANY radioactive material outside its normal system boundries. (For Example: spent resin spill, RCS liquid spill, spent fuel accident resulting in gaseous release, etc.)

| RELATED EALS: | TAB |
|---|---|
| Radiological Effluents | 5 |
| Containment Radiation High | 1 |
| Spent Fuel Accident | 5 |
| RCS Leakage | 2 |

ATTACHMENT 3
UNIT 1
RADIOLOGICAL EFFLUENTS

5.6

CONDITION:

Spent Fuel Accident

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. The loss of water OR damage to a spent fuel assembly occurs in the Rx core (head removed), refueling canal, spent fuel pool, cask loading pit, fuel tilt pit or any plant area involved in the movement or storage of spent fuel.

AND

2. Radiation levels increase to 10 R/hr on Area Radiation Monitors or 10 Rem/hr HP Survey Report.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| High Radiation/Airborne Levels | 5 |
| Miscellaneous Events | 9 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.1

CONDITION:

Deviation from T.S. action statements when required to shutdown or cooldown or deviations pursuant to 10CFR50.54(x)

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

1. EITHER of the following conditions exist:

   A. Inability to reach required mode within Tech. Spec. limits.

   B. Deviation from Tech Specs authorized pursuant to 10CFR50.54(x)

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage | 2 |
| OTSG Tube Leak | 3 |
| RCS Activity High | 1 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.2

CONDITION:

Reactor Protection System Failure to Complete an Automatic Trip

EMERGENCY CLASSIFICATION:

Alert

MODES 1-2

CRITERIA:

1. A valid RPS trip setpoint is exceeded on ANY TWO RPS channels and the RPS fails to initiate and complete an automatic trip that brings the reactor subcritical.

AND

2. DSS trip or subsequent efforts to manually trip the Reactor from the Control Room and bring it subcritical are successful.

RELATED EALS:

| | TAB |
|---|---|
| RPS Failure to Complete a Manual Trip | 6 |
| Core Melt | 1 |
| Core Damage Indicated with an ICC Condition | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.3

CONDITION:

Reactor Protection System Failure to Complete an Manual Trip

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-2

CRITERIA:

1. A valid RPS trip setpoint is exceeded on ANY TWO RPS channels and the RPS or DSS fails to initiate and complete an automatic trip that brings the reactor subcritical.

AND

2. Failure of manual trip function occurs. (Failure to trip the Reactor in the Control Room; i.e., must leave Control Room to trip the Reactor.)

RELATED EALS:

| | TAB |
|---|---|
| Loss of or Challenge to 3 Fission Product Boundaries | 1 |
| Core Melt | 1 |
| Core Damage Indicated with an ICC Condition | 1 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.4

CONDITION:

Loss of Dose Assessment Capabilities

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. The following conditions exist in the Low Level Radwaste Building:

   A. SPING is inoperable AND
   B. Compacting is in progress AND
   C. Inability to obtain and analyze local grab samples every 2 hours.

OR

2. Reactor Building Purge System or Penetration Ventilation System is not isolable, and the applicable SPING is inoperable.

OR

3. All of the following conditions exist for any source of gaseous effluents in the Auxiliary Building or Spent Fuel Storage Building ventilation systems.

   A. Applicable SPING is inoperable AND
   B. Inability to obtain and analyze local grab samples every 2 hours

RELATED EALS: TAB

None

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.5

CONDITION:

Loss of Communications

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Complete loss of ANY TWO of the following:
   - A. Plant telephone systems (Commercial Telephones and microwave)
   - B. Station Radio
   - C. Emergency Notification System

RELATED EALS: TAB

None

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.6

CONDITION:

Loss of Control Room Annunciators

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Loss of both AC and DC power to >50% of control room annunciators.

RELATED EALS:

| | TAB |
|---|---|
| Loss of Control Room Annunicators with Transient in Progress | 6 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.7

CONDITION:

Loss of Control Room Annunciators with Transient in Progress

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Loss of both AC and DC power to >50% of control room annunciators.

AND

2. A plant transient is initiated or in progress. (See section 4.18 of this procedure for the definition of a Plant Transient.)

RELATED EALS: TAB

None

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.8

CONDITION:

Control Room Evacuation

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Control Room evacuation is expected to occur OR has already occurred.

RELATED EALS:

| | TAB |
|---|---|
| Control Room Evacuation and control of shutdown systems not established in 15 minutes | 6 |
| Fire or explosion onsite affecting both trains of any ES Systems | 7 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.9

CONDITION:

Control Room Evacuation and control of shutdown systems not established in 15 minutes.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Control Room evacuation has occurred AND control of shutdown systems is not established from local stations within 15 minutes.

RELATED EALS:

| | TAB |
|---|---|
| Core Damage Indicated with an ICC Condition | 1 |
| Loss of Decay Heat Removal Systems | 6 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.10

CONDITION:

Loss of Decay Heat Removal Capabilities

EMERGENCY CLASSIFICATION:

Alert

MODES 5-6

CRITERIA:

1. Loss of Decay Heat Removal capabilities shall be identified as ANY of the following:

   A. RCS indicates saturated conditions

   B. Loss of both Decay Heat trains for >1 hr and OTSGs are not available for decay heat removal (NA if Fuel Transfer Canal is flooded)

   C. HPI is required for cooling the reactor core.

RELATED EALS:

| | TAB |
|---|---|
| Core Damage Indicated with an ICC Condition | 1 |
| Radiological Effluents | 5 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| High Radiation/Airborne Levels | 5 |
| Core Melt | 1 |

ATTACHMENT 3
UNIT 1
SAFETY SYSTEM FUNCTION

6.11

CONDITION:

Degraded Hot Shutdown Capability

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. Degraded HSD capability shall be identified as ANY of the following:

   A. Loss of ALL steam removal capability on BOTH OTSGs. (e.g., Loss of ALL Turbine Bypass Valves, Atmospheric Dump Valves, and Main Steam Safety Valves)

   B. Loss of ALL feedwater supply capability on BOTH OTSGs. (e.g., Loss of BOTH Main Feedwater Trains and BOTH EFW trains)

   C. BOTH HPI Trains are inoperable and they are required for cooling the reactor core.

RELATED EALS:

| | TAB |
|---|---|
| Core Damage Indicated with an ICC Condition | 1 |
| Containment Radiation Very High | 1 |
| Core Melt | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.1

CONDITION:

Security threat onsite but outside the Protected Area Security Fence (e.g., attempted entry or sabotage which has been stopped outside the security fence).

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Security threat onsite but outside the Protected Area Security Fence (e.g., attempted entry or sabotage which has been stopped outside the security fence).

OR

2. A Credible site-specific security threat notification.

| RELATED EALS: | TAB |
|---|---|
| Ongoing security Threat Inside Protected Area Fence but outside plant buildings | 7 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.2

CONDITION:

Ongoing security threat within the Protected Area Security Fence but outside of plant buildings

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

Same as the Condition stated above.

| RELATED EALS: | TAB |
|---|---|
| Ongoing security threat within plant buildings but not in Control Room or vital areas. | 7 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.3

CONDITION:

Ongoing security threat within plant buildings but not within the Control Room or vital areas

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

Same as the Condition stated above.

RELATED EALS:

| | TAB |
|---|---|
| Ongoing security Threat within Control Room or Vital Areas | 7 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION.

7.4

CONDITION:

Ongoing security threat within the Control Room or vital areas

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

Same as the Condition stated above.

RELATED EALS: TAB

None

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.5

CONDITION:

Fire or Explosion Onsite

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Fire within the Protected Area Security Fence which is not extinguished within 10 minutes.

OR

2. Explosion causing facility damage.

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion Onsite Affecting One Train of an ES System | 7 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.6

CONDITION:

Fire or Explosion Onsite Affecting One Train of ANY ES Systems

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Fire or explosion onsite

AND

2. A potential or actual loss of a single train of ANY ES system as a result of the fire or explosion

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion Onsite Affecting Both Trains of ANY ES System | 7 |
| Control Room Evacuation | 6 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.7

CONDITION:

Fire or Explosion Onsite Affecting Both Trains of ANY ES Systems

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Fire or explosion onsite

AND

2. A potential or actual loss of Both trains of ANY ES system as a result of the fire or explosion

| RELATED EALS: | TAB |
|---|---|
| Control Room Evacuation and control of shutdown systems not established in 15 minutes | 6 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.8

CONDITION:

Aircraft Crash, Unusual Aircraft Activity, Train Derailment, Turbine Failure, Toxic or Flammable Gas Release

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. ANY of the following:

   A. Aircraft crash onsite.

   B. Unusual Aircraft activity over the facility.

   C. Train derailment onsite.

   D. Turbine rotating component failure causing rapid plant shutdown.

   E. Toxic or flammable gas release which limits or restricts access to areas required for security or safe operation of the plant.

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion Onsite | 7 |
| Security Threat | 7 |
| Aircraft Crash, Missiles, Toxic or Flammable Gas Affecting One Train of ANY ES System | 7 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION.

7.9

CONDITION:

Aircraft Crash, Missiles, Toxic or Flammable Gas Affecting One Train of ANY ES Systems

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. ANY of the following:
   - A. Aircraft crash onsite.
   - B. Missiles/Projectiles from any source
   - C. Toxic or flammable gas release

AND

2. A potential OR actual loss of a single train of ANY ES system

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion Onsite Affecting One Train of an ES System | 7 |
| Aircraft Crash, Missiles, Toxic or Flammable Gas Affecting Both Trains of ANY ES System | 7 |

ATTACHMENT 3
UNIT 1
HAZARDS TO STATION OPERATION

7.10

CONDITION:

Aircraft Crash, Missiles, Toxic or Flammable Gas Affecting Both Trains of ANY ES System

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. ANY of the following:
   - A. Aircraft crash onsite.
   - B. Missiles/Projectiles from any source
   - C. Toxic or flammable gas release

AND

2. A potential OR actual loss of BOTH trains of ANY ES system

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion Onsite Affecting Both Trains of an ES System | 7 |

ATTACHMENT 3
UNIT 1
NATURAL EVENTS

8.1

CONDITION:

Tornado, Flood, Loss of Dardanelle Reservoir, Earthquake

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. ANY of the following:

   A. Tornado observed on the ground within the Exclusion Area

   B. Flood - Lake level ≥340' elev. and rising, with forecasted lake level ≥350' elev.

   C. Low Level - Lake level ≤337' elev. AND forecasted by U.S. Army Corp of Engineers to reach 335' elev.

   D. Earthquake - VERIFIED earthquake accompanied by .01g alarm.

RELATED EALS:

| | TAB |
|---|---|
| Tornado, High Winds, Flood, Loss of Dardanelle Reservoir, Earthquake | 8 |

ATTACHMENT 3
UNIT 1
NATURAL EVENTS

8.2

CONDITION:

Tornado, High Winds, Flood, Loss of Dardanelle Reservoir, Earthquake

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. ANY of the following:

   A. Tornado striking vital facility structures (e.g. housing ES related equipment)

   B. High Winds - Sustained winds of ≥60 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments).

   C. Flood - Flood waters ≥350' elev. and are forecasted by U.S. Army Corp of Engineers to reach or exceed 354' elev.

   D. Low Level - Lake level ≤335' elev

   E. Earthquake - VERIFIED earthquake accompanied by .1g alarm.

   or

   Any natural event resulting in the potential or actual loss of ONE train of ANY ES system.

| RELATED EALS: | TAB |
|---|---|
| Tornado, High Winds, Flood, Loss of Dardanelle Reservoir, Earthquake<br>Loss of or challenge to all 3 Fission Product Barriers | 8<br>1 |

NATURAL EVENTS

8.3

CONDITION:

Tornado, High Winds, Flood, Loss of Dardanelle Reservoir, Earthquake

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. ANY of the following:

   A. High Winds - Sustained winds of ≥67 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments).

   B. Flood - Flood Water Level is >361' elev.

   C. Low Level Lake level ≤335' elev. and Emergency Cooling Pond not available

   D. VERIFIED Earthquake ≥0.2g

   E. Tornado, high wind, flood, low lake level or earthquake resulting in the potential or actual loss of BOTH trains of ANY ES system.

RELATED EALS:

| | TAB |
|---|---|
| Loss of or challenge to all 3 Fission Product Barriers | 1 |

ATTACHMENT 3
UNIT 1
MISCELLANEOUS EVENTS

9.1

CONDITION:

Other plant conditions exist that warrant increased awareness on the part of the operating staff and state and/or local offsite authorities or involve other than normal controlled shutdown.

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

An event has occurred and the following conditions exist:

1. This event is not covered by any other EAL

AND

2. This event does not challenge or cause the loss of a fission product barrier

AND

3. In the judgement of the SM/TSC Director/EOF Director this event requires an increased awareness by the ANO staff and offsite authorities.

RELATED EALS:

| | TAB |
|---|---|
| Plant Conditions Exist that Warrant Precautionary Activation of the TSC | 9 |

ATTACHMENT 3
UNIT 1
MISCELLANEOUS EVENTS

9.2

CONDITION:

Other plant conditions exist that warrant precautionary activation of the Technical Support Center and placing the near-site Emergency Operations Facility and other key emergency personnel on standby.

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

The following conditions must exist

1. This event is not covered by any other EAL.

AND

2. This event must either challenge or cause the loss of a fission product barrier.

OR

Plant conditions exist that warrant activation of the Emergency Response Organization.

RELATED EALS:

| | TAB |
|---|---|
| Plant Conditions Exist that Warrant Activation of the Emergency Response Centers. | 9 |

ATTACHMENT 3
UNIT 1
MISCELLANEOUS EVENTS

9.3

CONDITION:

Other plant conditions exist that warrant activation of the emergency response facilities and monitoring teams or a precautionary notification to the public near the site.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

The following conditions must exist

1. This event is not covered by any other EAL.

AND

2. The event must cause ANY of the following:

   A. Challenge two fission product barriers

   B. Failure of one fission product barrier and a challenge to another

   C. Failure of Two fission product barriers

RELATED EALS:

| | TAB |
|---|---|
| Plant Conditions Exist that Make Release of Large Amounts of Radioactivity Possible | 9 |

ATTACHMENT 3
UNIT 1
MISCELLANEOUS EVENTS

9.4

CONDITION:

Plant Conditions Exist That Make Release of Large Amounts of Radioactivity Possible

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

The following conditions must exist:

1. This event is not covered by any other EAL

AND

2. Events have occurred that make a release of large amounts of radioactivity in a short period of time possible.

RELATED EALS: TAB

None

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.1

CONDITION:

RCS Activity indicates >0.1% fuel cladding failure

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-5

CRITERIA:

1. Greater than 0.1% fuel cladding failure as indicated by EITHER of the following:

   A. Selected isotope activity (I-131) >5.5E$^5$ CPM (2RR4806 on 2C14 or 2RITS 4806B on 2C22)

   B. Specific I-131 sample results >37.8 µCi/gm

RELATED EALS:

| | TAB |
|---|---|
| RCS Activity | 1 |
| T.S. L.C.O.'s | 6 |
| General Area Radiation/Airborne | 5 |

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.2

CONDITION:

RCS Activity indicates >1.0% fuel cladding failure

EMERGENCY CLASSIFICATION:

Alert

MODES 1-5

CRITERIA:

1. Greater than 1% fuel cladding failure as indicated by either of the following:

   1. RCS Sample Analysis >378 µCi/gm specific I-131

      OR

   2. Radiation levels that indicate >1% fuel cladding failure per Unit 2 Fuel Cladding Failure Radiation Plot (Att 8)

RELATED EALS:

| | TAB |
|---|---|
| General Area Radiation/Airborne | 5 |
| Containment Radiation | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Damage/ICC | 1 |

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.3

CONDITION:

Core Damage Indicated with an Inadequate Core Cooling Condition

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-5

CRITERIA:

1. Greater than 1% fuel cladding failure as indicated by either of the following:

   1. RCS Sample Analysis >378 µCi/gm specific I-131

   OR

   2. Radiation levels that indicate >1% fuel cladding failure per Unit 2 Fuel Cladding Failure Radiation Plot (Att 8)

   AND

2. Inadequate core cooling capacity exists as indicated by ANY of the following:

   A. Th RTD and average CET temperature indicates >10°F superheat AND RVLMS LVL 7 or Lower indicates Dry.

   B. Th RTD and average CET temperature indicates >10°F superheat with both RVLMS Channels inoperable AND RCS temperatures increasing.

   C. CET Temperatures indicate greater than 700°F.

RELATED EALS:

| | TAB |
|---|---|
| Decay Heat Removal | 6 |
| Containment Radiation | 1 |
| Core Melt | 1 |
| RCS Leakage | 2 |

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.4

CONDITION:

Containment Radiation readings which indicate LOCA and >1% fuel cladding failure

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Containment Radiation Levels correspond to a Site Area Emergency as determined from the containment radiation EAL plot (Att 6)

AND

2. LOCA occurring within the Containment Building

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation | 1 |
| Loss of or challenge to 3 Fission Product Barriers | 1 |
| Radiological Effluents | 5 |
| Core Melt | 1 |

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.5

CONDITION:

Containment Radiation readings which indicate LOCA and >50% fuel overheat

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. Containment Radiation Levels correspond to a General Emergency as determined from the containment radiation EAL plot (Att 6)

AND

2. LOCA occurring within the Containment Building

RELATED EALS:

| | TAB |
|---|---|
| Loss of or challenge to 3 Fission Product Barriers | 1 |
| Radiological Effluents | 5 |
| Core Melt | 1 |

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.6

CONDITION:

Core Melt with Containment Integrity Lost or Challenged

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. ANY of the following events occur

   A. Small or Large LOCA and a complete failure of ALL ECCS systems occurs.

   B. Loss of ALL feedwater AND S/G Level in both S/G's is ≤70" (Wide Range) AND a complete failure of ALL ECCS Systems occurs.

   C. Anticipated transient without a Rx trip

AND

2. Containment Integrity is lost OR challenged as defined by 4.10.3 or 4.11.3 (Definitions)

RELATED EALS:

| | TAB |
|---|---|
| Loss of or challenge to 3 Fission Product Barriers | 1 |
| Containment Radiation | 1 |
| Radiological Effluents | 5 |

ATTACHMENT 4
UNIT 2
PRIMARY SYSTEM EVENTS

1.7

CONDITION:

Loss of or challenge to all 3 Fission Product Barriers

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. Either of the following conditions exist:

   A. Fuel Cladding Failure (refer to section 4.10.1)
   B. Challenge to Fuel Cladding (refer to section 4.11.1)

AND

2. Either of the following conditions exist:

   A. RCS boundary failure (refer to section 4.10.2)
   B. Challenge to RCS boundary (refer to section 4.11.2)

AND

3. Either of the following condition exist

   A. Containment Integrity failure (refer to section 4.10.3)
   B. Challenge to Containment Integrity (refer to section 4.11.3)

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation | 1 |
| Core Melt | 1 |
| Radiological Effluents | 5 |
| Natural Events | 8 |

ATTACHMENT 4
UNIT 2
RCS LEAKAGE

2.1

CONDITION:

RCS Leakage

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. Unidentified or pressure boundary RCS leakage greater than 10 gpm.

OR

2. Identified RCS leakage greater than 25 gpm.

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage | 2 |
| T.S. L.C.O.'s | 6 |
| Primary to Secondary Leakage | 3 |
| General Area Radiation/Airborne | 5 |

ATTACHMENT 4
UNIT 2
RCS LEAKAGE

2.2

CONDITION:

RCS Leakage > 44 gpm

EMERGENCY CLASSIFICATION:

Alert

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. RCS Leakage is >44 gpm (Capacity of a single Charging Pump).

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage | 2 |
| General Area Radiation/Airborne | 5 |
| Containment Radiation | 1 |
| Decay Heat Removal | 6 |
| Primary to Secondary Leakage | 3 |

ATTACHMENT 4
UNIT 2
RCS LEAKAGE

2.3

CONDITION:

RCS Leakage > 44 gpm with ICC Conditions

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

**NOTE**

RCS leakage is defined as a loss of RCS inventory due to a leak in the RCS or a supporting system that is not or cannot be isolated within 10 minutes.

1. RCS Leakage is >44 gpm (Capacity of a single Charging Pump).

AND

2. Inadequate Core Cooling conditions exist as indicated by ANY of the following:

   A. Th RTD and average CET temperature indicates >10°F superheat AND RVLMS LVL 7 or Lower indicates Dry.

   B. Th RTD and average CET temperature indicates >10°F superheat with both RVLMS Channels inoperable AND RCS temperature increasing.

   C. CET Temperatures indicate greater than 700°F.

RELATED EALS:

| | TAB |
|---|---|
| Core Damage/ICC | 1 |
| Radiological Effluents | 5 |
| Containment Radiation | 1 |
| Core Melt | 1 |
| Loss of or challenge to 3 Fission Product Barriers | 1 |
| Primary to Secondary Leakage | 3 |

ATTACHMENT 4
UNIT 2
SECONDARY SYSTEM EVENTS

3.1

CONDITION:

Uncontrolled S/G Depressurization Resulting in MSIS Actuation

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

1. Any actuation of MSIS due to uncontrolled Steam Generator depressurization.

| RELATED EALS: | TAB |
|---|---|
| Primary to Secondary Leakage | 3 |
| Radiological Effluents | 5 |

ATTACHMENT 4
UNIT 2
SECONDARY SYSTEM EVENTS

3.2

CONDITION:

S/G Tube Leak > Tech Spec Limits

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

1. Primary to Secondary Leakage exceeds EITHER of the following limits

   A. Total leakage through both S/G's is > 300 gallons per day (0.2083 gpm)

   OR

   B. Leakage to 1 S/G is > 150 gallons per day (0.1042 gpm)

RELATED EALS:

| | TAB |
|---|---|
| RCS Leakage | 2 |
| Primary to Secondary Leakage | 3 |
| Radiological Effluents | 5 |

ATTACHMENT 4
UNIT 2
SECONDARY SYSTEM EVENTS

3.3

CONDITION:

S/G Tube Leak >10 gpm with an Ongoing Steam Release

EMERGENCY CLASSIFICATION:

Alert

MODES 1-4

CRITERIA:

1. S/G tube leak >10 gpm with a Steam Release in Progress from either or both steam generator(s) as indicated by ANY of the following:

   A. Main Steam Safety Valves maintaining S/G Pressure
   B. SDBCS Atmospheric Dump Valves in Use
   C. Steam Line Break Outside of Containment
   D. 2P7A is in use and continued operation is required to maintain S/G levels.

RELATED EALS:

| | TAB |
|---|---|
| Primary to Secondary Leakage | 3 |
| RCS Leakage | 2 |
| General Area Radiation/Airborne | 5 |
| Radiological Effluents | 5 |
| Electrical Power | 4 |

ATTACHMENT 4
UNIT 2
SECONDARY SYSTEM EVENTS

3.4

CONDITION:

Steam Generator Tube Rupture >44 gpm With an Ongoing Steam Release and RCS Activity > 1.0 µCi/gm, but < 378 µCi/gm (1% fuel cladding failure).

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. S/G tube leak >44 gpm with a Steam Release in Progress from either or both steam generator(s) as indicated by ANY of the following:

   A. Main Steam Safety Valve(s) maintaining S/G Pressure
   B. SDBCS Atmospheric Dump Valve(s) in Use
   C. Steam Line Break Outside of Containment
   D. 2P7A is in use and continued operation is required to maintain S/G levels.

AND

2. RCS Activity > 1.0 µCi/gm (T.S. 3.4.8), but < 378 µCi/gm (1% fuel cladding failure).

RELATED EALS:

**CAUTION**

**If fuel cladding failure is ≥ 1% (≥ 378 µCi/gm I-131), EAL 1.7 will apply. If fuel cladding is degrading and failure approaches 1% (378 µCi/gm I-131), consider EAL 1.7.**

| | TAB |
|---|---|
| RCS Leakage | 2 |
| Radiological Effluents | 5 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Melt | 1 |
| Electrical Power | 4 |

ATTACHMENT 4
UNIT 2
ELECTRICAL POWER FAILURES

4.1

CONDITION:

Degraded Power

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All Modes

CRITERIA:

1. Temporary Loss of Normal Control Room Lighting

AND

2. No voltage indicated on Both 4.16 KV nonvital busses (2A1 & 2A2)

AND

3. At least one Emergency Diesel or Station Blackout Diesel started and supplying a vital bus (2A3 or 2A4)

RELATED EALS:

| | TAB |
|---|---|
| Electrical Power | 4 |
| MSIS | 3 |
| Primary to Secondary Leak | 3 |

ATTACHMENT 4
UNIT 2
ELECTRICAL POWER FAILURES

4.2

CONDITION:

Station Blackout

EMERGENCY CLASSIFICATION:

Alert

MODES All Modes

CRITERIA:

1. Loss of all Control Room Lighting except emergency DC Lights

AND

2. No voltage indicated on Both 4.16 KV nonvital busses. (2A1 and 2A2)

AND

3. No voltage indicated on Both 4.16 KV vital busses (2A3 and 2A4)

RELATED EALS:

| | TAB |
|---|---|
| Electrical Power | 4 |
| Communications, Dose Assessment | 6 |
| Primary to Secondary Leak | 3 |
| Decay Heat Removal | 6 |
| Core Melt | 1 |

ATTACHMENT 4
UNIT 2
ELECTRICAL POWER FAILURES

4.3

CONDITION:

Loss of All Vital DC

EMERGENCY CLASSIFICATION:

Alert

MODES 1-4

CRITERIA:

1. Loss of All of the following busses has occurred:

   A. 2D01 and 2D02
   B. 2RA1 and 2RA2
   C. 2D21 and 2D23
   D. 2D22 and 2D24

RELATED EALS:

| | TAB |
|---|---|
| Electrical Power | 4 |
| Communications, Dose Assessment | 6 |

ATTACHMENT 4
UNIT 2
ELECTRICAL POWER FAILURES

4.4

CONDITION:

Blackout >15 minutes.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Blackout has occurred as indicated by ALL of the following:

   A. Loss of all Control Room lighting except emergency DC lights
   B. No voltage indicated on Both 4.16 KV nonvital busses (2A1 and 2A2)
   C. Neither Vital 4.16 KV Buss energized (2A3 or 2A4)

AND

2. The Blackout Condition exists for >15 minutes

RELATED EALS:

| | TAB |
|---|---|
| Decay Heat Removal | 6 |
| Electrical Power | 4 |
| Primary to Secondary Leakage | 3 |
| Core Melt | 1 |
| Radiological Effluents | 5 |

ATTACHMENT 4
UNIT 2
ELECTRICAL POWER FAILURES

4.5

CONDITION:

Loss of ALL Vital DC for >15 minutes

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Loss of both of the following trains of DC Busses has occurred:

| RED TRAIN | GREEN TRAIN |
|---|---|
| 2D01 | 2D02 |
| 2RA1 | 2RA2 |
| 2D21 | 2D22 |
| 2D23 | 2D24 |

AND

2. Power is not restored to at least one train within 15 minutes

RELATED EALS:

| | TAB |
|---|---|
| Communications, Dose Assessment | 6 |
| Decay Heat Removal | 6 |
| Core Melt | 1 |
| Radiological Effluents | 5 |

ATTACHMENT 4
UNIT 2
RADIOLOGICAL EFFLUENTS

5.1

CONDITION:

Projected or measured activity at the Site Boundary, averaged over one hour, is greater than or equal to 0.05 mrem/hr TEDE or 0.15 mrem/hr Child Thyroid CDE or Liquid radiological effluents exceed ODCM Limitations.

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected activity at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 0.05 mrem/hr TEDE or 0.15 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report activity at the Site Boundary which, when averaged over the previous one hour, exceeds 0.05 mrem/hr TEDE or 0.15 mrem/hr Child Thyroid CDE.

   OR

   C. Liquid radiological effluents exceed ODCM Limitations.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| General Area Radiation/Airborne | 5 |
| Primary to Secondary Leak | 3 |

ATTACHMENT 4
UNIT 2
RADIOLOGICAL EFFLUENTS

5.2

CONDITION:

Projected or measured activity at the Site Boundary, averaged over one hour, is greater than or equal to 0.5 mrem/hr TEDE or 1.5 mrem/hr Child Thyroid CDE or Liquid radiological effluents exceed 10 times ODCM Limitations.

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected activity at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 0.5 mrem/hr TEDE or 1.5 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report activity at the Site Boundary which, when averaged over the previous one hour, exceeds 0.5 mrem/hr TEDE or 1.5 mrem/hr Child Thyroid CDE.

   OR

   C. Liquid radiological effluents exceed 10 times ODCM Limitations.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| Primary to Secondary Leak | 3 |
| Containment Radiation | 1 |

ATTACHMENT 4
UNIT 2
RADIOLOGICAL EFFLUENTS

5.3

CONDITION:

Radiological Effluents are greater than or equal to 50 mrem/hr TEDE or 150 mrem/hr Child Thyroid CDE at the Site Boundary.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected dose rates at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 50 mrem/hr TEDE or 150 mRem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report dose rates at the Site Boundary are greater than or equal to 50 mrem/hr TEDE or 150 mrem/hr Child Thyroid CDE.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| Containment Radiation | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Melt | 1 |

ATTACHMENT 4
UNIT 2
RADIOLOGICAL EFFLUENTS

5.4

CONDITION:

Radiological Effluents are greater than or equal to 250 mrem/hr TEDE or 500 mrem/hr Child Thyroid CDE at the Site Boundary.

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

1. Radiological Release which exceeds ANY of the following limits

   A. Projected dose rates at the Site Boundary, as calculated by the RDACS method, indicate greater than or equal to 250 mrem/hr TEDE or 500 mrem/hr Child Thyroid CDE.

   OR

   B. Offsite monitoring teams report dose rates at the Site Boundary are greater than or equal to 250 mrem/hr TEDE or 500 mrem/hr Child Thyroid CDE.

RELATED EALS:

| | TAB |
|---|---|
| Core Melt | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Containment Radiation | 1 |

ATTACHMENT 4
UNIT 2
RADIOLOGICAL EFFLUENTS

5.5

CONDITION:

High Radiation/Airborne Levels

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. The loss of control of radioactive material results in ANY of the following:

   A. Containment radiation indicates >2R/hr

   B. Area Radiation levels in controlled access (excluding containment) increase by 1 Rem/hr at 2 or more locations.

   C. General area radiation levels outside of radiologically controlled areas increase by 10 mRem/hr.

   D. Airborne levels as follows:
   - Auxiliary Building ≥100 DAC (General Area)
   - Turbine Building ≥10 DAC

NOTE: "Loss of Control" Shall be defined as: Any Radioactive material outside its normal system boundaries.
(For Example: Spent resin spill, RCS liquid spill, Spent fuel accident resulting in gaseous release, etc.)

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| Containment Radiation | 1 |
| Spent Fuel Damage | 5 |
| RCS Leakage | 2 |

ATTACHMENT 4
UNIT 2
RADIOLOGICAL EFFLUENTS

5.6

CONDITION:

Spent Fuel Accident

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. The loss of water OR damage to a spent fuel assembly occurs in the Rx core (head removed), refueling canal, spent fuel pool, cask loading pit, fuel tilt pit or any plant area involved in the movement or storage of spent fuel.

AND

2. Radiation levels increase to 10 R/hr by Area Radiation Monitors or 10 Rem/hr HP survey report.

RELATED EALS:

| | TAB |
|---|---|
| Radiological Effluents | 5 |
| General Area Radiation/Airborne | 5 |
| Miscellaneous | 9 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.1

CONDITION:

Deviation from T.S. action statements when required to shutdown or cooldown or deviations pursuant to 10CFR50.54(x)

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES 1-4

CRITERIA:

1. EITHER of the following conditions exist:

   A. Inability to reach required mode within Tech. Spec. limits.

   B. Deviation from Tech Specs authorized pursuant to 10CFR50.54(x)

| RELATED EALS: | TAB |
|---|---|
| RCS Leakage | 2 |
| Primary to Secondary Leakage | 3 |
| RCS Activity | 1 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.2

CONDITION:

Reactor Protection System Failure to Complete an Automatic Trip

EMERGENCY CLASSIFICATION:

Alert

MODES 1-2

CRITERIA:

1. A valid RPS trip setpoint is exceeded

AND

2. Ten (10) or more CEAs fail to insert as result of the automatic trip

AND

3. CEAs are inserted either by manual trip or DSS.

RELATED EALS:

| | TAB |
|---|---|
| RPS Failure | 6 |
| Core Melt | 1 |
| Core Damage/ICC | 1 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.3

CONDITION:

Reactor Protection System Failure to Complete a Manual Trip

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-2

CRITERIA:

1. A valid RPS trip setpoint is exceeded

AND

2. Ten (10) or more CEAs fail to insert after the RPS, DSS and manual trip

(Example: 2B7 & 2B8 feeder breakers opened to insert CEAs due to a failure of automatic and manual RPS trips.)

RELATED EALS:

| | TAB |
|---|---|
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Core Melt | 1 |
| Core Damage/ICC | 1 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.4

CONDITION:

Loss of Dose Assessment Capabilities

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. The following conditions exist in the Low Level Radwaste Building:

   A. SPING is inoperable
   B. Compacting is in progress
   C. Inability to obtain and analyze local grab samples every 2 hours.

OR

2. Reactor Building Purge penetration is not isolable and both the applicable SPING and the Process Radiation Monitor are inoperable.

OR

3. All of the following conditions exist for any source of gaseous effluents in the Auxiliary Building, Auxiliary Extension Building, or Spent Fuel Storage Building ventilation systems.

   A. Applicable SPING is inoperable
   B. Applicable Process Radiation Monitor is inoperable
   C. Inability to obtain and analyze local grab samples every 2 hours.

| RELATED EALS: | TAB |
|---|---|
| Communications, Dose Assessment | 6 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.5

CONDITION:

Loss of Communications

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Complete loss of ANY TWO of the following:
   - A. Plant telephone systems (Commercial telephones and microwave)
   - B. Station Radio
   - C. Emergency Notification System

RELATED EALS: TAB

None

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.6

CONDITION:

Control Room Evacuation

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Control Room evacuation is expected to occur OR has already occurred

RELATED EALS:

| | TAB |
|---|---|
| Control Room Evacuation | 6 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.7

CONDITION:

Control Room Evacuation and control of shutdown systems not established in 15 minutes.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. Control Room evacuation has occurred AND control of shutdown systems is not established from local stations within 15 minutes.

RELATED EALS:

| | TAB |
|---|---|
| Core Damage/ICC | 1 |
| Decay Heat Removal | 6 |
| Core Melt | 1 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.8

CONDITION:

Loss of Decay Heat Removal Capabilities

EMERGENCY CLASSIFICATION:

Alert

MODES 5-6

CRITERIA:

1. Loss of Decay Heat Removal capabilities shall be identified as ANY of the following:

   A. RCS indicates saturated conditions

   B. Loss of both shutdown cooling trains for >1 hr and S/G's not available for decay heat removal (NA if Fuel Transfer Canal >23 ft)

   C. HPSI injection required for cooling the core

RELATED EALS:

| | TAB |
|---|---|
| Spent Fuel Accident | 5 |
| Core Damage/ICC | 1 |
| Radiological Effluents | 5 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| High Radiation/Airborne | 5 |
| Core Melt | 1 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.9

CONDITION:

Loss of Both S/Gs as a Heat Removal Method

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. ALL of the following conditions exist:

   A. S/G level in BOTH S/Gs is <70"

   AND

   B. ECCS Vent System is utilized

RELATED EALS:

| | TAB |
|---|---|
| Containment Radiation | 1 |
| RCS Leakage | 2 |
| Core Melt | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.10

CONDITION:

Loss of Control Room Annunciators

EMERGENCY CLASSIFICATION:

Alert

MODES ALL

CRITERIA:

1. Loss of BOTH AC and DC power to 9 or more of the Control Room Annunciator Panels.

| RELATED EALS: | TAB |
|---|---|
| Loss of Control Room Annunciators with a Transient in progress | 6 |
| Electrical Power | 4 |

ATTACHMENT 4
UNIT 2
SAFETY SYSTEM FUNCTION

6.11

CONDITION:

Loss of Control Room Annunciators with a Transient in Progress

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES ALL

CRITERIA:

1. Loss of BOTH AC and DC power to 9 or more of the Control Room Annunciator Panels.

AND

2. A plant transient is initiated OR in progress. (See Section 4.18 of this procedure for the definition of a Plant Transient).

| RELATED EALS: | TAB |
|---|---|
| Electrical Power | 4 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.1

CONDITION:

Security threat onsite but outside the Protected Area Security Fence (e.g. attempted entry or sabotage which has been stopped outside the security fence).

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Security threat onsite but outside the Protected Area Security Fence (e.g., attempted entry or sabotage which has been stopped outside the security fence).

OR

2. A credible site-specific security threat notification.

| RELATED EALS: | TAB |
|---|---|
| Security Threat | 7 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.2

CONDITION:

Ongoing security threat within the Protected Area Security Fence but outside of plant buildings.

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

Same as the Condition stated above.

| RELATED EALS: | TAB |
|---|---|
| Security Threat | 7 |
| Fire or Explosion | 7 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.3

CONDITION:

Ongoing security threat within plant buildings but not within the Control Room or vital areas.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

Same as the Condition stated above.

| RELATED EALS: | TAB |
|---|---|
| Security Threat | 7 |
| Fire/Explosion | 7 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.4

CONDITION:

Ongoing security threat within the Control Room or vital areas.

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

Same as the Condition stated above.

RELATED EALS: TAB

None

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.5

CONDITION:

Fire or Explosion Onsite

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. Fire within the Protected Area Security Fence which is not extinguished within 10 minutes.

OR

2. Explosion causing facility damage.

| RELATED EALS: | TAB |
|---|---|
| Fire or Explosion | 7 |
| Security Threat | 7 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.6

CONDITION:

Fire or Explosion Onsite affecting One Train of ESF Systems

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. Fire or explosion onsite

AND

2. A potential or actual loss of a single train of ANY ESF system as a result of the fire or explosion.

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion | 7 |
| Communications, Dose Assessment | 6 |
| Control Room Evacuation | 6 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.7

CONDITION:

Fire or Explosion Onsite affecting Both Trains of ESF Systems

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. Fire or explosion onsite

AND

2. A potential or actual loss of Both trains of ANY ESF system as a result of the fire or explosion.

RELATED EALS:

| | TAB |
|---|---|
| Communications, Dose Assessment | 6 |
| Control Room Evacuation | 6 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.8

CONDITION:

Aircraft Crash, Unusual Aircraft Activity, Train Derailment, Turbine failure, Toxic or Flammable Gas

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. ANY of the following

   A. Aircraft crash onsite

   B. Unusual Aircraft activity over the facility

   C. Train derailment onsite

   D. Turbine rotating component failure causing rapid plant shutdown

   E. Toxic or flammable gas release which limits or restricts access to areas required for security or safe operation of the plant.

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion | 7 |
| Security Threat | 7 |
| MSIS | 3 |
| Other Hazards | 7 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.9

CONDITION:

Aircraft Crash, Missiles, Toxic or Flammable Gas Affecting One Train of ESF Systems

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. ANY of the following
   - A. Aircraft crash onsite
   - B. Missiles/Projectiles from any source
   - C. Toxic or flammable gas release

AND

2. A potential OR actual loss of a single train of ANY ESF system

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion | 7 |
| Other Hazards | 7 |

ATTACHMENT 4
UNIT 2
HAZARDS TO STATION OPERATION

7.10

CONDITION:

Aircraft Crash, Missiles, Toxic or Flammable Gas Affecting Both Redundant ESF Trains

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

1. ANY of the following
   - A. Aircraft crash onsite
   - B. Missiles/Projectiles from any source
   - C. Toxic or flammable gas release

AND

2. A potential OR actual loss of BOTH trains of ANY ESF system

RELATED EALS:

| | TAB |
|---|---|
| Fire or Explosion | 7 |

ATTACHMENT 4
UNIT 2
NATURAL EVENTS

8.1

CONDITION:

Tornado, Flood, Loss of Dardanelle Reservoir, Earthquake

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

1. ANY of the following

   A. Tornado observed on the ground within the Exclusion Area

   B. Flood - Lake level ≥340' elev. and rising with forecasted lake level ≥350' elev.

   C. Low Level - Lake level ≤337' AND forecasted by U.S. Army Corp of Engineers to reach 335'

   D. Earthquake - VERIFIED earthquake accompanied by .01g alarm.

| RELATED EALS: | TAB |
|---|---|
| Natural Events | 8 |

ATTACHMENT 4
UNIT 2
NATURAL EVENTS

8.2

CONDITION:

Tornado, High Winds, Flood, Loss of Dardanelle Reservoir, Earthquake

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

1. ANY of the following

   A. Tornado striking vital facility structures (e.g. housing ES related equipment)

   B. High Winds - Sustained winds of ≥72 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments).

   C. Flood - Flood waters ≥350' and are forecasted by U.S. Army Corp of Engineers to reach or exceed 354'

   D. Low Level - Lake level ≤335' elevation

   E. Earthquake - VERIFIED Earthquake accompanied by .1g alarm.

   OR

   Any natural event resulting in the potential or actual loss of ONE train of ANY ES system

RELATED EALS:

| | TAB |
|---|---|
| Natural Events | 8 |
| Loss of or challenge to all 3 Fission Product Barriers | 1 |

ATTACHMENT 4
UNIT 2
NATURAL EVENTS

8.3

CONDITION:

Tornado, High Winds, Flood, Loss of Dardanelle Reservoir, Earthquake

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES 1-4

CRITERIA:

1. ANY of the following

   A. High Winds - Sustained winds of ≥80 mph (10 minute average as reported by RDACS from either the 10 or 57 meter instruments).

   B. Flood - Flood Water Level is >361' elev.

   C. Low Level - Lake level ≤335' elev. and Emergency Cooling Pond not available.

   D. VERIFIED Earthquake ≥0.2g

   E. Tornado, high wind, flood, low lake level or earthquake resulting in the potential or actual loss of BOTH trains of ANY ESF system.

RELATED EALS:

| | TAB |
|---|---|
| Loss of or challenge to all 3 Fission Product Barriers | 1 |

ATTACHMENT 4
UNIT 2
MISCELLANEOUS EVENTS

9.1

CONDITION:

Other plant conditions exist that warrant increased awareness on the part of the operating staff and state and/or local offsite authorities or involve other than normal controlled shutdown.

EMERGENCY CLASSIFICATION:

Notification of Unusual Event

MODES All

CRITERIA:

An event has occurred and the following conditions exist:

1. This event is not covered by any other EAL

AND

2. This event does not challenge or cause the loss of a fission product barrier

AND

3. In the judgement of the SM/TSC Director/EOF Director this event requires an increased awareness by the ANO Staff and offsite authorities.

RELATED EALS:

| | TAB |
|---|---|
| RCS Activity | 1 |
| RCS Leakage | 2 |
| Primary to Secondary Leak | 3 |
| Radiological Effluents | 5 |
| T.S. L.C.O.'s | 6 |
| Loss of Indications/Communications/Dose Assessment | 6 |

ATTACHMENT 4
UNIT 2
MISCELLANEOUS EVENTS

9.2

CONDITION:

Other plant conditions exist that warrant precautionary activation of the Technical Support Center and placing the near-site Emergency Operations Facility and other key emergency personnel on standby.

EMERGENCY CLASSIFICATION:

Alert

MODES All

CRITERIA:

The following conditions must exist

1. This event is not covered by any other EAL

AND

2. This event must either challenge or cause the loss of a fission product barrier.

RELATED EALS:

| | TAB |
|---|---|
| RCS Activity | 1 |
| RCS Leakage | 2 |
| Primary to Secondary Leak | 3 |
| Radiological Effluents | 5 |
| Decay Heat Removal | 6 |

ATTACHMENT 4
UNIT 2
MISCELLANEOUS EVENTS

9.3

CONDITION:

Other plant conditions exist that warrant activation of emergency response facilities and monitoring teams or a precautionary notification to the public near the site.

EMERGENCY CLASSIFICATION:

Site Area Emergency

MODES All

CRITERIA:

The following conditions must exist

1. This event is not covered by any other EAL

AND

2. This event may cause ANY of the following:

   A. Challenge to two fission product barriers

   B. Failure of one fission product barrier and a challenge to another

   C. Failure of 2 fission product barriers

RELATED EALS:

| | TAB |
|---|---|
| Core Damage/ICC | 1 |
| Containment Radiation | 1 |
| Decay Heat Removal | 6 |
| Radiological Effluents | 5 |
| RCS Leakage | 2 |
| Primary to Secondary Leak | 3 |

ATTACHMENT 4
UNIT 2
MISCELLANEOUS EVENTS

9.4

CONDITION:

Plant Conditions Exist That Make Release of Large Amounts of Radioactivity Possible

EMERGENCY CLASSIFICATION:

General Emergency

MODES All

CRITERIA:

The following conditions must exist

1. This event is not covered by any other EAL

AND

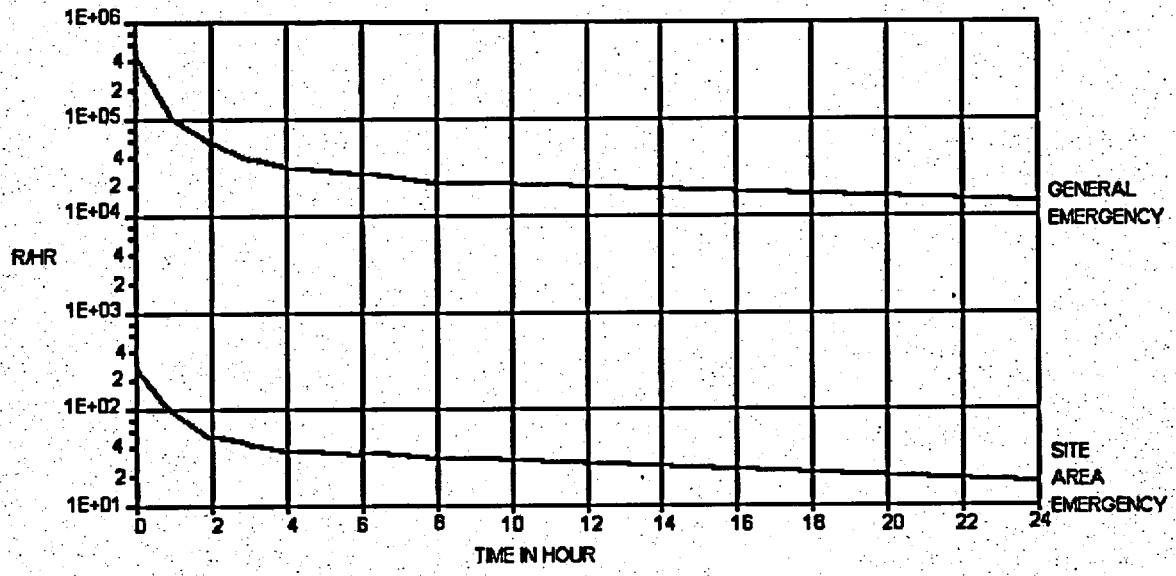
2. Events have occurred that make a release of large amounts of radioactivity in a short period of time possible.

RELATED EALS:

| | TAB |
|---|---|
| Core Melt | 1 |
| Loss of or Challenge to 3 Fission Product Barriers | 1 |
| Containment Radiation | 1 |
| Radiological Effluents | 5 |

ATTACHMENT 5
UNIT 1

CONTAINMENT RADIATION EAL PLOT




## INSTRUCTIONS

**CAUTION**

* In the absence of a significant containment temperature transient, monitor readings should be considered valid.
* In the event of a significant containment temperature transient, monitor readings may be erratic for a short duration (Ref.IN-97-45, Supplement 1)

A. Determine the containment radiation level.

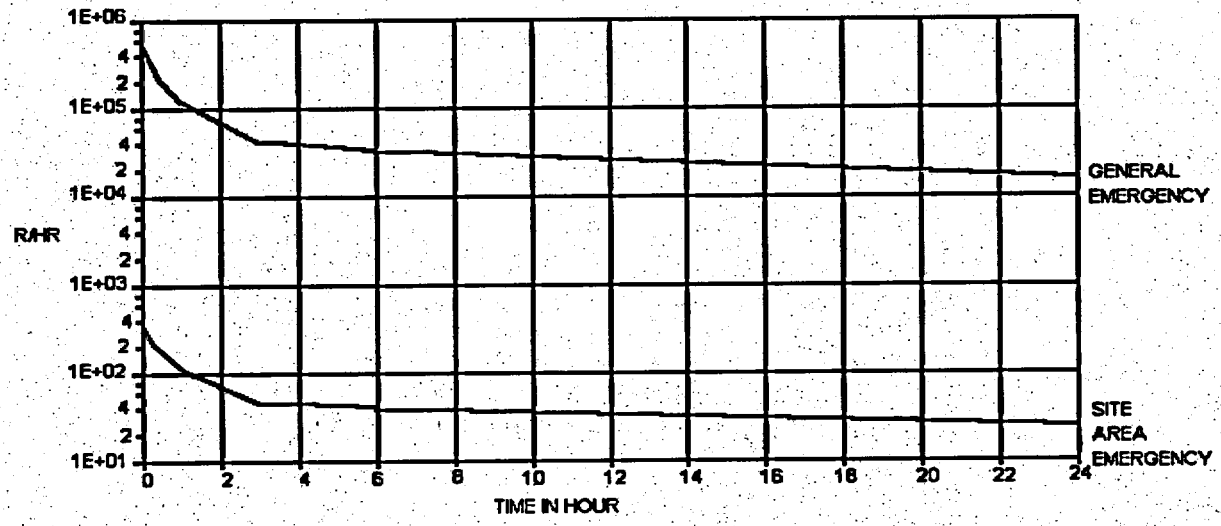
1. If the plant has been operating at 100% for the past 30 days, use the reading from RE-8060 or RE-8061.
2. If the plant has been operating at less than 100% power for the past 30 days, determine the radiaiton level as follows:

$$\text{Rad level} = \text{Reading from RE-8060 or RE-8061 X } \frac{100\%}{\text{estimated ave. power for the past 30 days}}$$

B. Determine the time after shutdown (in hours).
C. Find the intersection of the values from A and B on the graph.
D. Determine the emergency class.
   1. SITE AREA EMERGENCY - intersection is between the two curves
   2. GENERAL EMERGENCY - intersection is above the upper curve

ATTACHMENT 6
UNIT 2

CONTAINMENT RADIATION EAL PLOT




## INSTRUCTIONS

**CAUTION**

* In the absence of a significant containment temperature transient, monitor readings should be considered valid.
* In the event of a significant containment temperature transient, monitor readings may be erratic for a short duration (Ref.IN-97-45, Supplement 1)

A. Determine the containment radiation level.

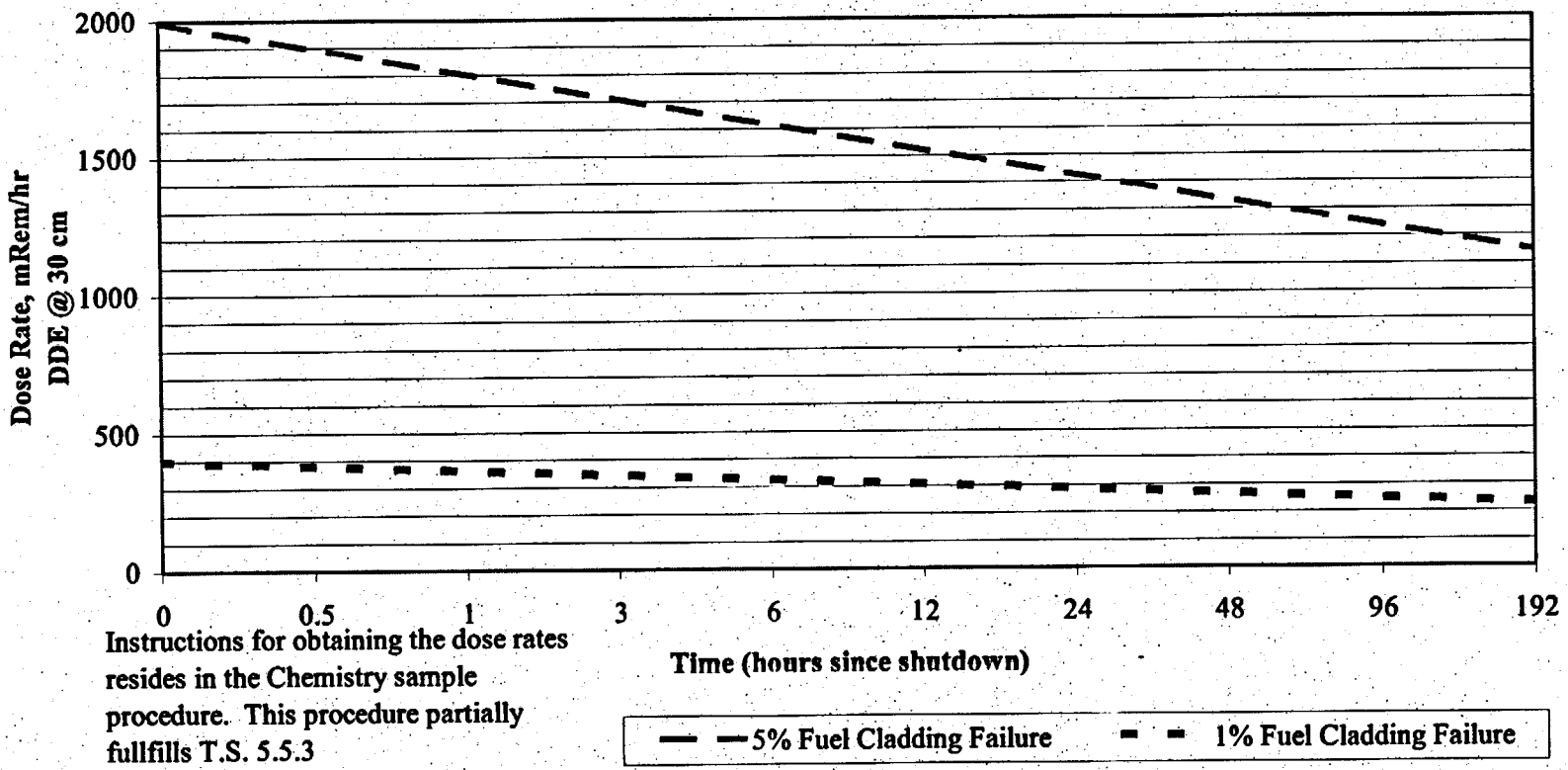
1. If the plant has been operating at 100% for the past 30 days, use the reading from 2RY-8925-1 or 2RY-8925-2.

2. If the plant has been operating at less than 100% power for the past 30 days, determine the radiaiton level as follows:

$$\text{Rad level} = \text{Reading from 2RY-8925-1 or 2RY-8925-2} \times \frac{100\%}{\text{estimated ave. power for the past 30 days}}$$

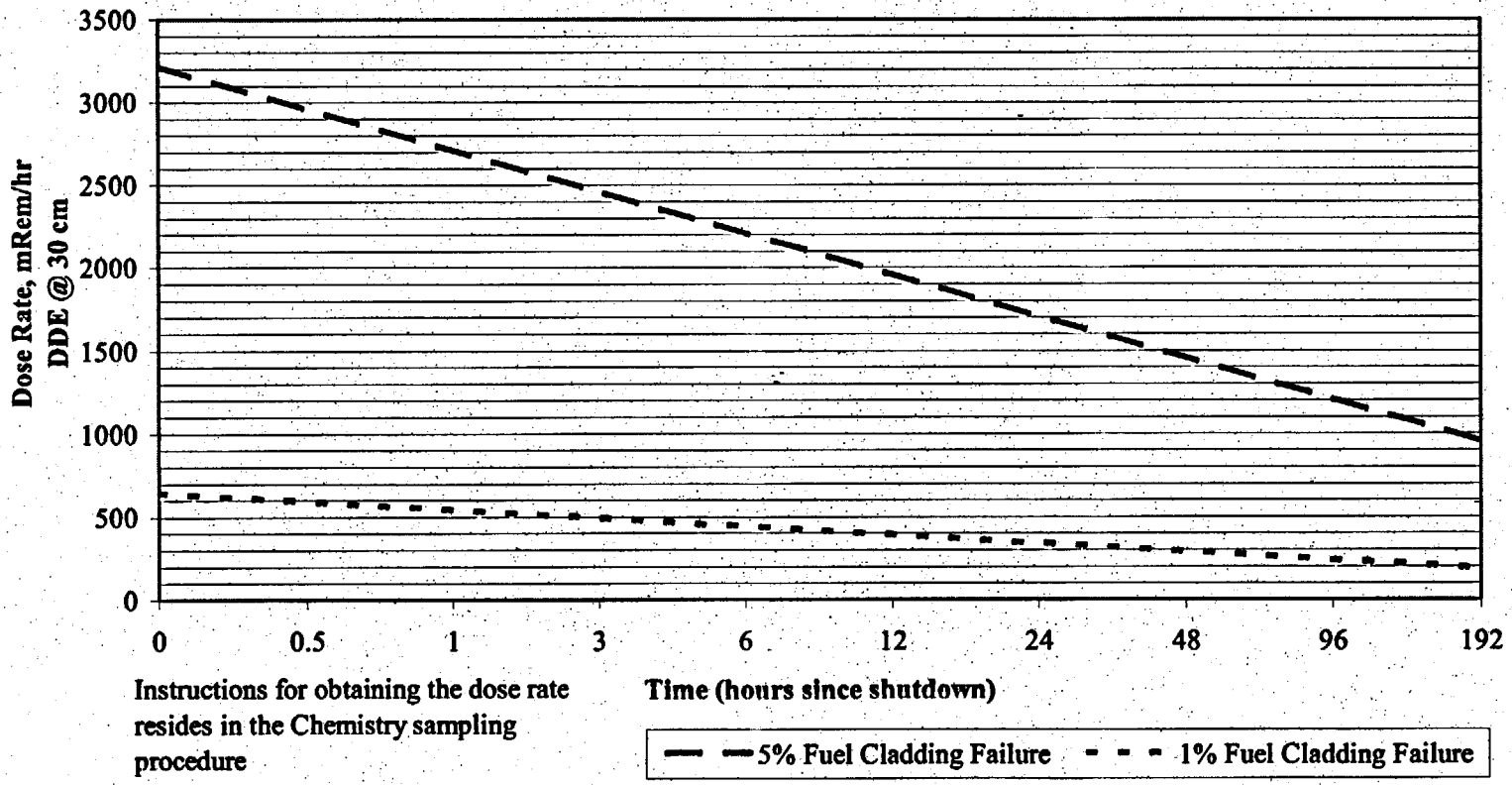
B. Determine the time after shutdown (in hours).
C. Find the intersection of the values from A and B on the graph.
D. Determine the emergency class.
   1. SITE AREA EMERGENCY - intersection is between the two curves
   2. GENERAL EMERGENCY - intersection is above the upper curve

## Attachment 7 (0CNA080005)
## Unit 1 Fuel Cladding Failure Radiation Plot
### mRem/hr at SA-229




Instructions for obtaining the dose rates resides in the Chemistry sample procedure. This procedure partially fullfills T.S. 5.5.3

## Attachment 8 (0CNA080005)
## Unit 2 Fuel Cladding Failure Radiation Plot
### mRem/hr at 2TCD-19




Instructions for obtaining the dose rate resides in the Chemistry sampling procedure