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Monticello Nuclear Generating Plant
Operated by Nuclear Management Company, LLC

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10 CFR 50.54(q)
10 CFR 50.4(b)(5)
10 CFR 50, App E

April 23, 2003

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

MONTICELLO NUCLEAR GENERATING PLANT
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MONTICELLO EMERGENCY PLAN, REVISION 23 AND
EMERGENCY PLAN IMPLEMENTING PROCEDURE A.2-101, REVISION 30

Pursuant to and in accordance with the requirements of 10 CFR 50.54(q), 10 CFR 50.4(b)(5) and 10 CFR 50 Appendix E, Section V, Nuclear Management Company, LLC, is providing the NRC with Revision 23 of the Monticello Emergency Plan and Revision 30 of Emergency Plan Implementing Procedure A.2-101. The revisions were evaluated against the criteria of 10 CFR 50.47, 10 CFR 50, Appendix E, and other NRC guidance documents.

The enclosures to this letter replace in their entirety the superseded Revision 22 of the Monticello Emergency Plan and Revision 29 of Emergency Plan Implementing Procedure A.2-101. A summary of significant changes to the Monticello Emergency Plan is provided in the attachment. Changes are indicated by a vertical line in the margin of the enclosures.

In addition, in accordance with 10 CFR 50, Appendix E, Section IV.B, the state and local counties have concurred with the Emergency Action Level (EAL) changes contained in Section 4.0 of the Monticello Emergency Plan.

The Monticello Operations Committee has reviewed these revisions. The revisions do not reduce the effectiveness of the Monticello Nuclear Generating Plant Emergency Plan. This letter contains no new NRC commitments, nor does it modify any prior commitments.

A045

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Attachment: Summary of Changes to Monticello Emergency Plan, Revision 23

Enclosures: Emergency Plan, Revision 23
Emergency Plan Implementing Procedure A.2-101, Revision 30

Summary of Changes to Monticello Emergency Plan, Revision 23

Affected Section	Summary of Changes
Section EP-4	
4.2.1.1c (also A.2-101 GL-1 Unusual Event, 1c.)	Changed recorder IDs used to confirm the EAL from "RR-7858A and RR-7858B" to "RR-7801A and RR7801B"
4.2.1.1d (also A.2-101 GL-1 Unusual Event, 1d.)	Changed recorder IDs used to confirm the EAL from "RR-7859A and RR-7859B" to "RR-7801A and RR7801B"
4.2.7.1d (also A.2-101 GL-17 Unusual Event 1d.)	Added the following initiating condition for declaring an Unusual Event based on a security compromise: "Low Credible Security Threat Notification Received "
4.4.11.1c (also A.2-101 GL-17 Alert 1c.)	Added the following initiating condition for declaring an Alert based on a security compromise. "High Credible Security Threat Notification Received."
Section EP-5	
5.1.2.4 & 5.1.2.5	Reassigned the primary Shift Emergency Communicator (SEC) responsibilities from the Shift Chemistry Technician to the Security staff in revision 21 of E-Plan. <u>Change made IAW section 8.2.2 of this plan.</u>
5.2.2.5	Typo Correction – Changed "designed" to "designated." <u>Administrative change.</u>
5.3.1.2	Added "For non-security related events." This provides clarification that the requirement for the Emergency Manager to takeover responsibilities from the Emergency Director in about 60 minutes at the Primary EOF does not apply for security related events. For security related events, the Back-up EOF is required to be manned.
5.3.1.3	Reassigned the primary Shift Emergency Communicator (SEC) responsibilities from the Shift Chemistry Technician to the Shift Security Lieutenant in revision 21 of E-Plan. <u>Change made IAW section 8.2.2 of this plan.</u>
5.3.1.4	Removed "In addition to the Radiation Protection Technicians."
5.3.2	Removed Engineering personnel from ERO Call-list.

Summary of Changes to Monticello Emergency Plan, Revision 23

Affected Section	Summary of Changes
Section EP-6	
6.2.1.1	Changed from "The Shift Manager directs the Shift Emergency Communicator to make the necessary emergency notifications including the on-site Emergency Response Organization" to "The Shift Manager directs the completion of the necessary emergency notifications including the on-site Emergency Response Organization."
6.6.1.1	Changed from having decontamination kits located at the various areas to having decontamination kits available for the various areas.
6.2.1.4.B	Increased the number of PANS sirens in the 5-10 mile EPZ from "44" to "54."
Section EP-7	
7.3.1.2.B	Replaced "power supplies" with "power sources" throughout this section. Administrative change. Changed all measurements given in feet to the equivalent measurement given in meters to provide unit consistency throughout this section. Administrative change.
4th paragraph	Replaced "one windspeed transmitter, one wind direction transmitter" with "one combination wind speed and direction sensor." Change resulted from modification made to Met Data recorder in Control Room. Change made IAW section 8.2 2 of this plan.
5th paragraph	Replaced "a battery power supply" with " a UPS." Administrative change.
6th & 7th paragraphs	Changed "instrument processor" to "instrument processor rack." Administrative change.
7.5.2	Replaced "Shift Supervisor's Office" with "Work Execution Center." Administrative change.
7.7	Increased the number of PANS sirens in Monticello's system from "81" to "91."
Table 7.0-1	Removed "2000" from "FTS-2000." Replaced "Xcel" with "Xcel Energy." Administrative change

Summary of Changes to Monticello Emergency Plan, Revision 23

Affected Section	Summary of Changes
Section EP-7 (continued)	
Table 7.0-4	Corrected the time over which met data is averaged and recorded on the Met Recorder in the Control Room. (Changed from 15 minutes to 5 minutes.) Change made IAW section 8 2.2 of this plan Changed all measurements given in feet to the equivalent measurement given in meters to provide unit consistency throughout the table. Administrative change
Table 7.0-7	Verified information and updated per operations personnel review. Changes made IAW section 8 2.2 of this plan.
Table 7.0-8	Replaced "Shift Supv Office" with "Work Execution Center." Administrative change. Replaced "Emergency Vehicles (2)" with "Vehicles for Emergency Use (2)." This provides clarification that other vehicles may be designated for emergency use should one of the primary vehicles become unavailable. Change made IAW section 8 2.2 of this plan.
Figure 7.0-2	Changed Room 14 from a "Training Room" to an "Office Room" to reflect its current non-emergency use. Administrative change.
Figure 7.0-3	Verified information and updated per System Engineer review. Change made IAW section 8.2.2 of this plan.

EMERGENCY PLAN IMPLEMENTING PROCEDURE - TABLE OF CONTENTS

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FOR ADMINISTRATIVE USE ONLY

This revision incorporates Volume F Memos: 2110

3087 (DOCUMENT CHANGE, HOLD, AND COMMENT FORM) incorporated: 02-3435, 03-0029, 03-0490

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I/mab

1.0 PURPOSE

This procedure specifies conditions or groups of conditions that indicate an emergency exists and the actions to be taken by Operations personnel to verify and classify the type of emergency condition.

2.0 APPLICABILITY

2.1 An off-normal condition corresponding to one of the initiating events described in FIGURE 7.2 (Emergency Classification Guidelines) of this procedure is occurring or has occurred.

3.0 ORGANIZATION AND RESPONSIBILITIES

3.1 The Emergency Director (TSC) is responsible for:

3.1.1 Direction of overall site emergency response in accordance with A.2-213 (RESPONSIBILITIES OF THE EMERGENCY DIRECTOR).

3.1.2 Emergency classification, declaration and notification in accordance with Section 6.1.1.

3.1.3 Event termination or recovery in accordance with A.2-602 (EVENT TERMINATION OR RECOVERY).

3.2 The Duty Shift Manager (Interim Emergency Director) is responsible for the following until relieved by a designated Emergency Director:

3.2.1 Direction of overall site emergency response and assuming the responsibilities of Emergency Director.

3.2.2 Emergency classification, declaration and notification in accordance with Section 6.1.2.

3.2.3 Implementing the EPIP which corresponds to the declared emergency.

3.2.4 Event termination or recovery in accordance with A.2-602 (EVENT TERMINATION OR RECOVERY).

3.3 The Duty Shift Supervisor and Control Room Operators are responsible for:

3.3.1 Immediate notification of the Duty Shift Manager of any events that may be classified as emergency conditions.

3.3.2 Verification of emergency condition indications.

3.3.3 Assisting with assessment and determination of emergency classification.

3.3.4 Taking immediate actions in accordance with plant procedures and directives to control the event and place the plant in a stable condition.

3.4 The Shift Emergency Communicator is responsible for:

3.4.1 The performance of emergency notifications and communications in accordance with plant procedures and directives.

4.0 DISCUSSION

4.1 Three distinct phases in the Emergency Classification, Declaration and Notification process

4.1.1 During the implementation of this procedure, the Emergency Director must consider the three distinct phases in the Emergency Classification, Declaration and Notification process.

A. **Classification:** The act of **assessing** the EALs to determine the appropriate classification which the ongoing events are categorized. This may take a reasonable length of time (5 to 15 minutes for most situations) depending upon the complexity of the situation. This 15 minute assessment period is consistent with the NRC Branch Position on Timeliness of Classification of Emergency Conditions, EPPOS No. 2.

B. **Declaration:** The act of formally **declaring** the classification based on the assessment of EALs. This is the point at which the classification time is set and the 10CFR50, App. E 15 minute off-site notification clock starts.

C. **Notification:** The act of **making the notification(s)** to the State, Wright and Sherburne Counties, NRC, etc.

4.2 Definitions

4.2.1 Emergency Condition - An occurrence, or combination of events and indications that fall into one of the following classifications:

A. Notification of Unusual Event (NUE)

Unusual events are in process or have occurred which indicate a potential degradation of the level of safety of the plant. No releases of radioactive material requiring off-site response or monitoring are expected unless further degradation of safety systems occurs.

B. Alert

Events are in process or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.

C. Site Area Emergency

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

D. General Emergency

Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels off-site.

4.2.2 Emergency Action Levels (EAL) - Numerical or qualitative values for the operational or radiological parameters, (radiological dose rates; water borne or surface deposited concentrations of radioactivity; specific instrument indications or changes in indications) used as thresholds for initiating procedures or actions to assess and verify plant conditions. EAL may require initiating specific emergency procedures as designated by a particular class of emergency.

4.2.3 Release - The release of radioactive material to the environment attributable to the event.

4.2.4 Gap (Gap Release) - The radioactive material released from the fuel pellets during normal operation that is trapped in the fuel pin. If the pin fails (cladding fails), this material will be released from the gap into the reactor coolant.

4.3 Recognition

Attached to this procedure is FIGURE 7.2 (Emergency Classification Guidelines (1-30)). These guidelines identify the four emergency classifications, the possible initiating event(s), emergency action levels for each classification, and, where applicable, specific instruments and indications to be used to detect and classify an emergency. The identified instruments and alarms are a representative listing of various instruments that may be used to verify an emergency condition. There are many process variables referred to in the guidelines.

The instruments, indications, or alarms listed for any particular event are not necessarily a complete list of all those that will show abnormal indications or be useful in classifying the event. There is typically more than one instrument or instrument channel that monitors a specific parameter. The redundant channels and coincident indicators should be used to verify the emergency condition.

The emergency action levels specified in the guidelines do not necessitate initiation of any particular phase of the emergency plan but rather signify a need for assessment and classification of conditions. In many cases, the proper classification will be immediately apparent from in-plant instrumentation. In others, further assessment is necessary to determine the applicable emergency classification.

The plant operating staff should consider the effect that combinations of initiating events have, that if taken individually would constitute a lower emergency classification but collectively may exceed the criteria for a higher classification.

4.4 Technical Specification Shutdown

Limiting Conditions of Operation (LCOs) require the plant to be brought to a required shutdown mode when the Technical Specification required configuration cannot be restored. Depending on the circumstances, this may or may not be an emergency or precursor to a more severe condition. In any case, the initiation of plant shutdown required by the site Technical Specifications requires a one hour report under 10CFR50.72 (b) Non-Emergency Events. The plant is within its safety envelope when being shut down within the allowable action statement time in the Technical Specifications.

An immediate Notification of an Unusual Event is required when the plant is not brought to the required operating mode within the allowable action statement time in the Technical Specifications. **Declaration of an Unusual Event is based on the time at which the LCO-specified action statement time period elapses under the site Technical Specifications and is not related to how long a condition may have existed.** Other required Technical Specification shutdowns that involve precursors to more serious events such as Physical or Radiological Hazards, Fission Product Barrier Degradation, or Equipment Malfunction requires an immediate Notification of an Unusual Event.

4.5 Rapidly Escalating and/or De-escalating Events

In the case of an event that rapidly escalates then de-escalates in emergency classification or is initiated at a higher emergency class then rapidly de-escalates, the initial off-site notifications ***SHALL*** indicate the current emergency classification. In addition to the current emergency class, the off-site authorities and NRC ***SHALL*** be informed of the highest emergency classification reached during the course of the event. This information should be included in the initial emergency notifications to the off-site authorities and NRC.

4.6 Late Discovery of a Classifiable Event or Condition

Late discovery of an event or condition which met the criteria for declaration of an emergency but no emergency had been declared and the basis for the emergency classification no longer exists at the time of discovery ***SHALL*** be reported to the NRC. This may be due to a rapidly concluded event or an oversight in the emergency classification made during the event or it may be determined during a post-event review. NRC notification (or an NRC update if the event was previously reported but misclassified) within one hour of the discovery of the undeclared (or misclassified) event ***SHALL*** be the reporting format (see 4 AWI-04.08.02 (10CFR50.72 AND 10CFR 73.71 IMMEDIATE NOTIFICATION)). Notification of state and local emergency response organizations ***SHALL*** also be considered. An actual declaration of the event is not necessary.

5.0 PRECAUTIONS

5.1 There are many indications of an emergency condition that may occur either individually, in group events or sequentially. The operator must be careful not to rely on any one indication as being absolutely indicative of an emergency condition. Although the operator should believe indications and take action based on those indications, they ***SHALL*** attempt to verify indications by checking secondary or coincident indicators. Continued surveillance and assessment of plant conditions is necessary to ensure that the emergency classification is appropriately revised as conditions change, or as more definitive information is obtained.

6.0 INSTRUCTIONS

6.1 Emergency Classification, Declaration, and Notification

6.1.1 Emergency Director (TSC) Instructions:

A. Refer to A.2-213, Section 6.11 (Emergency Classification Changes).

6.1.2 Duty Shift Manager (Interim Emergency Director) Instructions:

A. **Classification** - When informed of plant parameters, radiological release levels or events which indicate that an emergency classification may be appropriate, evaluate the emergency classification.

1. Confirm that the indications have been verified using redundant or coincident indications.

2. Refer to FIGURE 7.1 (List Of Initiating Conditions) and identify any guidelines applicable to the initiating condition.

3. Locate the applicable guideline in FIGURE 7.2.

4. If multiple events and/or indications are involved, classify the emergency based on the event (or indication) that results in the highest (most conservative) emergency classification.

5. Consider the effect that combinations of events have; that, if taken individually, would constitute a lower emergency classification but collectively may exceed the criteria for a higher classification.

6. Summon the Shift Emergency Communicator(s) to the Control Room via the Site PA system (Access #305).

B. **Declaration** - Declare the emergency class.

1. Announce the emergency classification in the Control Room.

C. **Notification** - in accordance with the appropriate Emergency Classification Checklist and Emergency Call-List (included in each emergency classification folder), notify the SEC to make the required notifications (i.e., State & Locals: 15 min., NRC: 1 hr., etc....)

1. Review the completed form(s) and sign the form(s) in the space provided.

D. Implement the EPIP which corresponds to the declared emergency classification and complete the appropriate emergency classification checklist.

6.2 Event Termination or Recovery

6.2.1 Perform Event Termination or Recovery in accordance with A.2-602.

7.0 FIGURES

FIGURE

7.1 List of Initiating Conditions

Initiating Condition	Guideline	Page
Radioactive Effluents (high release rate or unmonitored)	1	9
In-Plant Radiation Levels (increase, loss-of-control)	2	13
Intentionally Blank	3	15
Reactor Coolant Leak	4	16
Main Steam Line Break	5	19
Fuel Cladding Degradation (high coolant or OG activity)	6	21
Safety Relief Valve Failure	7	23
Intentionally Blank	8 - 11	24
Reactor Protection System Failure	12	25
Loss of Plant Shutdown or Shutdown Cooling Capability	13	26
Loss of Instrumentation (indicators, annunciators)	14	28
Control Room Evacuation	15	30
Toxic/Flammable Gases	16	31
Security Compromise	17	33
Loss of AC Power	18	35
Loss of DC Power	19	37
Tornado or Sustained Winds	20	39
River Water Hi / Lo (flood or low water level)	21	40
Earthquake	22	41
Fire	23	42
Explosion	24	43
Aircraft or Missiles	25	44
Miscellaneous (train derailment, turbine failure)	26	45
Intentionally Blank	27	46
General Emergency (All GUIDELINES)	28	47
Other Plant Conditions	29	52
Major Damage to Spent Fuel	30	53

FIGURE

7.2 Emergency Classification Guidelines

GUIDELINE 1

Radioactive Effluent

UNUSUAL EVENT

RADIOLOGICAL EFFLUENT OFF-SITE DOSE CALCULATION MANUAL (ODCM) LIMITS EXCEEDED

EALS

1a. Discharge Canal Monitor exceeds 400 CPS indicated by annunciator DISCHARGE CANAL HI RADIATION (4-A-22) and recorder C-02-17.358, and Shift Manager's judgement is the increase is due to release of radioactive byproduct materials from the plant.

OR

1b. Sampling identifies a liquid release to river which exceeds ODCM-02.01 limits.

OR

1c. Stack Effluent Monitor (Channel A or B) exceeds 90,000 μCi/Sec indicated by annunciator STACK EFFLUENT HI HI RADIATION (C-259-A-1) and RECORDERS RR-7801A and RR-7801B on C-257/C-258 and computer point STACK NOBLE GAS RELEASE RATE ALARM (PRM011).

OR

1d. Reactor Building Vent Effluent Monitor (Channel A or B) exceeds 4,500 uCi/sec indicated by annunciator RBV EFFLUENT HI HI RADIATION (C-259-A-2) and RECORDERS RR-7801A and RR-7801B on C-257/C-258.

OR

1e. Unmonitored gaseous release to the atmosphere which is estimated or suspected to exceed ODCM limits (4,500 μCi/Sec).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 1

Radioactive Effluent - Cont'd

ALERT

RADIOLOGICAL EFFLUENTS GREATER THAN 10 TIMES OFF-SITE DOSE CALCULATION MANUAL (ODCM) LIMITS

EALs

1a. Discharge Canal Monitor exceeds 4000 CPS.

OR

1b. Sampling identifies a liquid release to river which is 10 times ODCM-02.01 limits.

OR

1c. Stack Effluent Monitor (Ch A or B) exceeds 9.0E + 5 μCi/Sec.

OR

1d. Reactor Building Vent Effluent Monitor (Ch A or B) exceeds 4.5E+4 μCi/Sec.

OR

1e. Unmonitored gaseous release to the atmosphere which is estimated or expected to exceed 10 times ODCM-03.01 limits (4.5E+4 μCi/Sec).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 1

Radioactive Effluent - Cont'd

SITE AREA EMERGENCY

EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO GREATER THAN 50 Mrem/Hr FOR 1/2 HOUR OR GREATER THAN 500 Mrem/Hr (Whole Body) For 2 MINUTES (Or Five Times These Levels For Thyroid) AT THE SITE BOUNDARY FOR ADVERSE METEOROLOGY. THESE DOSE RATES ARE PROJECTED BASED ON OTHER PLANT PARAMETERS (e.g., Radiation Level In Containment With Leak Rate Appropriate For Existing Containment Pressure) OR ARE MEASURED IN THE ENVIRONS, OR EPA PROTECTIVE ACTION GUIDELINES ARE PROJECTED TO BE EXCEEDED OUTSIDE THE SITE BOUNDARY.

EALs

1a. Stack Effluent Monitor (Ch A or B) exceeds 5.7E+6 μCi/Sec for 30 minutes.
OR

1b. Stack Effluent Monitor (Ch A or B) exceeds 5.7E+7 μCi/Sec 2 minutes.
OR

1c. Stack release rate of radioiodines exceeds 5.7E+3 μCi/Sec for 30 minutes.
OR

1d. Stack release rate of radioiodines exceeds 5.7E+4 μCi/Sec for 2 minutes.
OR

1e. RB Vent Effluent Monitor (Ch A or B) exceeds 2.1E+6 μCi/Sec for 30 minutes.
OR

1f. RB Vent Effluent Monitor (Ch A or B) exceeds 2.1E+7 μCi/Sec for 2 minutes.
OR

1g. RB Vent release rate of radioiodines exceeds 3600 μCi/Sec for 30 minutes.
OR

1h. RB Vent release rate of radioiodines exceeds 3.6E+4 μCi/Sec for 2 minutes.
OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 1

Radioactive Effluent - Cont'd

SITE AREA EMERGENCY (Cont'd)

1i. Whole body doses (TEDE) greater than 1000 mrem or thyroid doses (CDE) of greater than 5000 mrem are projected beyond the site boundary.
OR

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

1j. Containment Radiation Monitor reading indicates above the 0.01% curve when plotted versus time after shutdown in accordance with A.2-208 (CORE DAMAGE ASSESSMENT) Section 6.2 and associated FIGURE 7.1.
OR

1k. Measured Whole Body dose rates at the site boundary or beyond exceed 50 mrem/hr for 30 minutes or 500 mrem/hr for 2 minutes.

OR

1l. Radioiodine concentrations measured at the site boundary or beyond exceed 7.0E-8 μCi/CC for 30 minutes or 7.0E-7 μCi/CC for 2 minutes.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 2

In-Plant Radiation Levels

UNUSUAL EVENT

Not Applicable

ALERT

SEVERE DEGRADATION IN CONTROL OF RADIOACTIVE MATERIALS

EAL

1a. Increase by a factor of 1000 in plant radiation levels as indicated by Area Radiation Monitoring System:

NOTE: EALs shown as FULL SCALE indicate that an increase by a factor of 1000 is beyond the range of the particular monitor. In these cases, a full scale reading combined with the Shift Manager's concurrence, *SHALL* meet the criteria for the ALERT classification. Reading in mrem/hr except as noted.

PANEL	DESCRIPTION	NORMAL	EAL
C-11	A-1 1027 RB NE Low	10	Full scale
C-11	A-2 1027 RB N High	5	5000
C-11	A-3 1027 RB W Stairway	1	1000
C-11	A-4 1001 Source Storage	20	Full scale
C-11	A-5 Fuel Pool Skimmer Tk Area	20	Full scale
C-11	A-6 1001' Decon Area	3	Full scale
C-11	A-7 985' Sample Hood	5	Full scale
C-11	A-8 Rx Cleanup System Access	0.25	250
C-11	A-9 962 RB East	0.8	800
C-11	A-10 East CRD HCU	3	Full scale
C-11	A-11 West CRD HCU	3	Full scale
C-11	A-12 TIP Drive Area	2	Full scale
C-11	A-13 TIP Cubicle	30	Full scale
C-11	A-14 HPCI Turbine Area	2	Full scale
C-11	A-15 Rx Bldg Drain Tk Area	25	Full scale
C-11	A-16 RCIC Pump Area	1	1000
C-11	A-17 East CS and RHR Area	20	Full scale

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 2

In-Plant Radiation Levels - Cont'd

ALERT - Cont'd

PANEL	DESCRIPTION	NORMAL	EAL
C-11	A-18 West CS and RHR Area	8	Full scale
C-11	A-19 Hot Chemistry Lab	.25	250
C-11	A-20 Control Room Low Range	0.02	20
C-11	A-21 Control Room High Range	3	3000
C-11	B-1 Turbine Operating Floor	90	Full scale
C-11	B-2 Turbine Front Standard	70	Full scale
C-11	B-3 Cond Demin Operating Area	3	1000
C-11	B-4 Mechanical Vacuum Pump Rm	9	Full scale
C-11	B-5 Feedwater Pump Area	1	1000
C-11	C-1 Radwaste Control Room	0.2	200
C-11	C-2 Sample Tank Area	3	Full scale
C-11	C-3 Conveyer Operating Area	0.2	200
C-11	D-1 Hot Machine Shop	0.2	200
C-252	E-1 Recombiner Instrument Room	1	Full scale
C-252	E-2 Recombiner Pump Room	3	Full scale
C-252	F-1 Off-gas Storage Foyer	0.3	100
C-11	F-2 Off-gas Storage Foyer High Range	<100	1000
C-257/C-258	Containment Rad Monitor	3-5 Rem/hr	50 Rem/hr

OR

1b. Direct measurement of radiation levels corresponding to an increase by a factor of 1000.

SITE AREA EMERGENCY

Not applicable

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 3

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FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 4

Reactor Coolant Leak

UNUSUAL EVENT

PRIMARY SYSTEM LEAK RATE EXCEEDS TECHNICAL SPECIFICATIONS

NOTE: **Under this GUIDELINE, an Unusual Event should be declared when the leak rate is confirmed to be in excess of the corresponding EAL value (i.e. 5 gpm unidentified leakage, 20 gpm identified leakage or 2 gpm increase in unidentified leak rate in 24 hours).**

EALs

1a. Unidentified leakage exceeds 5 gpm as indicated by computer point PCT 509 (FLOOR DRAIN SUMP RATE OF CHANGE) or calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

1b. Identified leakage exceeds 20 gpm as indicated by computer point PCT 508 (EQUIPMENT DRAIN SUMP RATE OF CHANGE) or calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

1c. Unidentified leakage rate increases 2 gpm within any 24 hour period as determined from Test 0381 (CONTAINMENT COOLANT LEAKAGE LOG).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 4

Reactor Coolant Leak - Cont'd

ALERT

PRIMARY COOLANT LEAK RATE GREATER THAN 50 gpm

NOTE: Failure of a SRV to close should not be classified using Guideline 4. The failure of a SRV to close should be classified using Guideline 7 (Safety Relief Valve Failure).

EAL

1a. Total leakage exceeds 50 gpm as indicated by computer point PCT 509 (FLOOR DRAIN SUMP RATE OF CHANGE) and computer point PCT 508 (EQUIPMENT DRAIN SUMP RATE OF CHANGE) or as calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

NOTE: Unisolable - The leak is NOT isolable from the Control Room OR an attempt for isolation from the Control Room has been made and was unsuccessful. An attempt for isolation should be made prior to the accident classification. If isolable upon identification, this Initiating Condition is not applicable.

1b. Unisolable primary system leakage outside the drywell as indicated by area temperatures or ARM levels ≥ maximum safe values in at least one area.

OR

1c. Shift Manager's judgement.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 4

Reactor Coolant Leak - Cont'd

SITE AREA EMERGENCY

KNOWN LOSS OF COOLANT ACCIDENT GREATER THAN MAKEUP CAPACITY

EAL

1a. Total leakage exceeds 50 gpm as indicated by computer point PCT 509 (FLOOR DRAIN SUMP RATE OF CHANGE) and computer point PCT 508 (EQUIPMENT DRAIN SUMP RATE OF CHANGE) or as calculated from indicator LR-7409 on Panel C-04 in the Control Room.

OR

NOTE: **Unisolable - The leak is NOT isolable from the Control Room OR an attempt for isolation from the Control Room has been made and was unsuccessful. An attempt for isolation should be made prior to the accident classification. If isolable upon identification, this Initiating Condition is not applicable.**

1b. Unisolable primary system leakage outside the drywell as indicated by area temperatures or ARM levels ≥ maximum safe values in at least one area.

AND

2. Reactor water level decreasing below 1 foot above active fuel (-114inches) indicated by FUEL ZONE LEVEL INDICATOR (LI-2-3-91A/B).

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 5

Main Steam Line Break

UNUSUAL EVENT

Not applicable

ALERT

MAIN STEAM LINE BREAK WITH MSIV MALFUNCTION CAUSING LEAKAGE TO SECONDARY CONTAINMENT

EALS

1. Shift Manager's judgement that MSIV is malfunctioning or continuing steam flow with evidence that the steam line break is outside primary containment (e.g. visual observation, radiation or temperature).

AND

2a. Annunciators MAIN STEAM LINE HIGH FLOW A/B ALARM (5-A-25/26) and RX WATER LEVEL HI/LO ALARM (5-B-24).

OR

2b. Annunciator MAIN STEAM TUNNEL HIGH TEMPERATURE A/B ALARM (5-A-17/18)

OR

2c. Annunciator MAIN STEAM LINE LEAKAGE ALARM (5-B-32).

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 5

Main Steam Line Break - Cont'd

SITE AREA EMERGENCY

MAIN STEAM LINE BREAK WITH FAILURE OF MSIVs TO ISOLATE THE LEAK AND CAUSING LEAKAGE OUTSIDE SECONDARY CONTAINMENT

EALs

1. Shift Manager or Emergency Director's judgement that MSIV is malfunctioning or continuing steam flow with evidence that steam line break is outside primary containment.

AND

2a. Annunciators MAIN STEAM LINE FLOW A/B ALARM (5-A-25/26) and RX WATER LEVEL HI/LO ALARM (5-B-24).
OR

2b. Annunciator MAIN STEAM TUNNEL HIGH TEMPERATURE ALARM (5-A-17/18).
OR

2c. Annunciator MAIN STEAM LINE LEAKAGE ALARM (5-B-32).

AND

3a. Annunciator TURBINE BUILDING HIGH RADIATION ALARM (4-A-21).
OR

3b. High airborne radioactivity levels in the Turbine Building indicated by Continuous Air Monitors (CAMs) or direct measurement.
OR

3c. Visual observation that blow-out panels between the Steam Chase and Turbine Building have been ruptured.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 6

Fuel Cladding Degradation

UNUSUAL EVENT

FUEL DAMAGE INDICATION

EALs

1a. Off-gas Pretreatment Monitor exceeds 20,000 (2×10^4) mrem/hr as indicated on Recorder RR-4902 or RM-17-150A and RM-17-150B.

OR

1b. Off-gas Pretreatment Monitor increases by 4,000 mrem/hr within 30 minutes at steady power as indicated by Recorder RR-4902 or RM-17-150A and RM-17-150B.

OR

1c. Reactor coolant I-131 dose equivalent exceeds 5 μCi/gram as determined by sample and analysis.

ALERT

SEVERE LOSS OF FUEL CLADDING INDICATED BY HIGH OFF-GAS AT OFF-GAS PRETREATMENT MONITOR (greater than 5 Ci/ Sec corresponding to 16 isotopes decayed 30 minutes) **OR** VERY HIGH COOLANT ACTIVITY SAMPLE (e.g., >300 μCi/gm I-131 dose equivalent).

EALs

1a. Off-gas Pretreatment Monitor exceeds 200,000 (2×10^5) mrem/hr indicated on Recorder RR-4902 or RM-17-150A and RM-17-150B.

OR

NOTE: Resin intrusion or excessive hydrogen injection rates may cause high radiation without fuel cladding damage.

1b. Main Steam Line Monitor indicates 6000 mrem/hr due to high radiation.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 6

Fuel Cladding Degradation - Cont'd

ALERT (Cont'd)

1c. Reactor coolant >300 μCi/gm I-131 dose equivalent as determined by sample and analysis.

OR

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

1d. Containment Radiation Monitor reading exceeds the Containment Monitor Response to Contained Source Curve (FIGURE 7.3).

SITE AREA EMERGENCY

DEGRADED CORE WITH POSSIBLE LOSS OF COOLABLE GEOMETRY

EALs

1. More than 1/3 of core uncovered as indicated by reactor water level below -174 inches.

AND

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

2. Containment Radiation Monitor reading exceeds the Containment Monitor Response to Containment Source Curve (Figure 7.3).

AND

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 6

Fuel Cladding Degradation - Cont'd

SITE AREA EMERGENCY (Cont'd)

3a. Reactor coolant >3,000 μCi/gm I-131 dose equivalent as determined by sampling and analysis.

OR

3b. Inability to insert control rods fully.

OR

3c. Inability to position SRMs or IRMs within core.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 7

Safety Relief Valve Failure

UNUSUAL EVENT

FAILURE OF A SAFETY RELIEF VALVE TO CLOSE FOLLOWING REDUCTION OF APPLICABLE PRESSURE

EALs

1a. Annunciator AUTO BLOWDOWN RELIEF VALVE LEAKAGE (3-A-09).

OR

1b. Annunciator SRV OPEN ALARM (5-A-46).

ALERT

Not applicable

SITE AREA EMERGENCY

Not Applicable

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 8

Intentionally Blank

GUIDELINE 9

Intentionally Blank

GUIDELINE 10

Intentionally Blank

GUIDELINE 11

Intentionally Blank

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 12

Reactor Protection System Failure

UNUSUAL EVENT

Not applicable

ALERT

FAILURE OF THE REACTOR PROTECTION SYSTEM TO INITIATE AND COMPLETE A SCRAM WHICH BRINGS THE REACTOR SUBCRITICAL

EALs

1. Valid Scram Signal.

AND

2. Neutron count rate indicates reactor critical.

SITE AREA EMERGENCY

TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO SCRAM (continued power operation but no core damage immediately evident)

NOTE: Refer to Guideline 6 for Fuel Cladding Degradation determination.

EALs

1. Failure to bring reactor subcritical with control rods.

AND

2. Failure of the Standby Liquid Control System.

AND

3. Shift Manager or Emergency Director's judgement that a transient is in progress.

AND

4. No indication of core damage (if core damage is indicated, declare a GENERAL EMERGENCY).

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 13

Loss of Plant Shutdown or Shutdown Cooling Capability

UNUSUAL EVENT

As specified in Guideline 29.

ALERT

COMPLETE LOSS OF ABILITY TO ACHIEVE OR MAINTAIN PLANT COLD SHUTDOWN

EALs

1a. Loss of core cooling capabilities needed to achieve plant cold shutdown.

OR

1b. Loss of core cooling capabilities required to maintain the Reactor Coolant Temperature < (less than) 212°F.

AND

2. Shift Manager's judgement that the plant cannot reach or maintain cold shutdown.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 13

Loss of Plant Shutdown or Shutdown Cooling Capability - Cont'd

SITE AREA EMERGENCY

COMPLETE LOSS OF ABILITY TO ACHIEVE OR MAINTAIN HOT SHUTDOWN

EALs

1. Inability to SCRAM and inoperable Standby Liquid Control System.

AND

2a. Loss of all Safety Relief Valve capability.

OR

2b. Inoperable RHR System.

OR

2c. Inoperable RHR heat sink.

AND

3a. Loss of main condenser cooling.

OR

3b. No makeup capability from either HPCI or RCIC Systems.

AND/OR

4. Shift Manager or Emergency Director's judgement that plant cannot reach or maintain hot shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 14

Loss of Instrumentation

UNUSUAL EVENT

INDICATIONS OR ALARMS ON PROCESS OR EFFLUENT PARAMETERS NOT FUNCTIONAL IN THE CONTROL ROOM TO AN EXTENT REQUIRING PLANT SHUTDOWN

ALERT

LOSS OF MOST OR ALL ANNUNCIATORS WHILE OPERATING ABOVE COLD SHUTDOWN AND PLANT IN STABLE CONDITION.

EALs

1. Unplanned loss of most or all of annunciators on panels C-03, C-04, C-05, C-08.

AND

2. Shift Manager's judgement that annunciators are non-functional.

AND

3. Loss of plant computer alarm display, alarm typer and SPDS display.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 14

Loss of Instrumentation - Cont'd

SITE AREA EMERGENCY

LOSS OF MOST OR ALL ANNUNCIATORS AND PLANT TRANSIENT INITIATED OR IN PROGRESS

EALs

1. Unplanned loss of most or all of annunciators on panels C-03, C-04, C-05, C-08.

AND

2. Shift Manager or Emergency Director's judgement that annunciators are non-functional.

AND

3. Loss of plant computer alarm display, alarm typer and SPDS display.

AND

4. Shift Manager or Emergency Director's judgement that a transient has been initiated or is in progress.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 15

Control Room Evacuation

UNUSUAL EVENT

Not applicable

ALERT

EVACUATION OF THE CONTROL ROOM IS REQUIRED OR ANTICIPATED AND CONTROL OF SHUTDOWN SYSTEMS HAVE BEEN ESTABLISHED AT LOCAL STATIONS. (If local control has not been established in 15 minutes, go to SITE AREA EMERGENCY)

EAL

1. As determined by Shift Manager.

SITE AREA EMERGENCY

EVACUATION OF CONTROL ROOM AND CONTROL OF SHUTDOWN SYSTEMS NOT ESTABLISHED FROM LOCAL STATIONS IN 15 MINUTES

EAL

1. As determined by Shift Manager or Emergency Director.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 16

Toxic/Flammable Gases

UNUSUAL EVENT

NEAR OR ON-SITE TOXIC OR FLAMMABLE GAS RELEASE

EAL

1a. Widespread toxic or flammable gaseous hazard being experienced or projected on-site (out side of plant) leading to the evacuation or sheltering of personnel outside the plant.

OR

1b. Receipt of recommendation by Local, County, or State Officials to evacuate personnel from the site based on an off-site hazardous or flammable gaseous release event.

ALERT

ENTRY INTO FACILITY ENVIRONS OF UNCONTROLLED TOXIC OR FLAMMABLE GASES

EAL

1a. Toxic gaseous concentrations being measured or projected within a large area of the plant at the breathing zone greater than:

a. 50 ppm Ammonia
b. 10 ppm Chlorine
c. 5 ppm Vinyl Chloride
d. 2000 ppm Butadiene
e. 50 ppm Ethylene Dichloride
f. 500 ppm Gasoline
g. 2100 ppm Propane
h. 2000 ppm L.P.G.
i. IDLH for any toxic gas

NOTE: IDLH = Immediately Dangerous to Life or Health. IDLH Reference: NIOSH Pocket Guide to Chemical Hazards.

OR

1b. Flammable gas concentrations being measured within the plant at a distance of greater than 10 feet from the source exceeding the lower explosive limit.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 16

Toxic/Flammable Gases - Cont'd

SITE AREA EMERGENCY

ENTRY OF UNCONTROLLED FLAMMABLE GASES INTO VITAL AREAS OR ENTRY OF UNCONTROLLED TOXIC GASES INTO VITAL AREAS WHERE LACK OF ACCESS TO THE AREA CONSTITUTES A SAFETY PROBLEM AND THE PLANT IS **NOT** IN COLD SHUTDOWN

EALs

1a. Toxic gaseous concentrations being measured or projected within a major portion of a vital area of the plant at the breathing zone greater than or equal to the following such that further access to the vital area is being prevented at a time when it is needed.

a. 50 ppm Ammonia
b. 10 ppm Chlorine
c. 5 ppm Vinyl Chloride
d. 2000 ppm Butadiene
e. 50 ppm Ethylene Dichloride
f. 500 ppm Gasoline
g. 2100 ppm Propane
h. 2000 ppm L.P.G.
i. IDLH for any toxic gas

NOTE: IDLH = Immediately Dangerous to Life or Health. IDLH Reference: NIOSH Pocket Guide to Chemical Hazards.

OR

1b. Flammable gas concentrations being measured or projected within a major portion of a vital area of the plant from an unisolable source exceeding the lower explosive limit such that further access to the vital area is being prevented at a time when it is needed.

AND

2. Plant **IS NOT** in cold shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

l/mab

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 17

Security Compromise

UNUSUAL EVENT

SECURITY THREAT OR ATTEMPTED ENTRY OR ATTEMPTED SABOTAGE

EAL

1a. Security determines the threat to be credible and the Shift Manager determines the threat would have an adverse impact on the safe operation or shutdown capability of the plant.

OR

1b. Security discovers an unauthorized attempted entry by force or stealth (secret) into the protected area.

OR

1c. Security confirms that an act of attempted sabotage did occur to vital plant equipment or security equipment.

OR

1d. Low credible security threat notification received.

ALERT

ON-GOING SECURITY COMPROMISE

EAL

1a. Security Safeguards Contingency event that results in unauthorized personnel commandeering an area within the protected area, but not controlling shutdown capability or any vital areas.

OR

1b. Bomb device discovered within plant protected area and outside of any vital area.

OR

1c. High credible security threat notification received.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 17

Security Compromise (Cont.)

SITE AREA EMERGENCY

IMMINENT LOSS OF PHYSICAL CONTROL OF THE PLANT

EAL

1a. Physical attack on the plant involving imminent occupancy of the Control Room, auxiliary shutdown panels, and any other vital areas.

OR

1b. Bomb device discovered within a vital area.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 18

Loss of AC Power

UNUSUAL EVENT

LOSS OF OFF-SITE POWER OR LOSS OF ON-SITE AC POWER CAPABILITY

EALs

1a. Verified zero voltage on bus voltage meters or breaker indicators for Bus 11, Bus 12, Bus 13, Bus 14, and 1AR transformer on Panel C-08.

OR

1b. Loss of 11 and 12 Emergency Diesel Generators when they are required to be operable by Technical Specifications and inoperability is not due to surveillance testing.

ALERT

LOSS OF OFF-SITE POWER AND LOSS OF ALL ON-SITE AC POWER (STATION BLACKOUT) (see Site Area Emergency for extended loss)

EALs

1. Verified zero voltage on bus voltage meters or breaker indicators for Bus 11, Bus 12, Bus 13, Bus 14, Bus 15, Bus 16, and 1AR transformer on Panel C-08.

AND

2. Loss of 11 and 12 Emergency Diesel Generators when they are required to be operable by Technical Specifications.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 18

Loss of AC Power - Cont'd

SITE AREA EMERGENCY

LOSS OF OFF-SITE POWER AND LOSS OF ALL ON-SITE AC POWER FOR MORE THAN 15 MINUTES

EALs

1. Verified zero voltage on bus voltage meters or breaker indicators for Bus 11, Bus 12, Bus 13, Bus 14, Bus 15, Bus 16 and 1AR transformer on Panel C-08.

AND

2. Loss of 11 and 12 Emergency Diesel Generators when they are required to be operable by Technical Specifications.

AND

3. Failure to restore power to at least one emergency bus within 15 minutes from the time of loss of both off-site and on-site AC power.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 19

Loss of DC Power

UNUSUAL EVENT

Not applicable

ALERT

LOSS OF ALL VITAL DC POWER (see Site Area Emergency for extended loss)

EALs

1. Loss of both 125 VDC power sources and loss of both 250 VDC power sources as indicated by annunciators:

   DIV. I 250V DC HI-LO VOLTAGE (8-A-20); **and**
   DIV. II 125 & 250V DC TROUBLE (20-B-09); **and**
   NO. 12 125V DC BUS VOLTAGE HIGH/LOW (8-B-13); **and**
   NO. 11 125V DC BUS VOLTAGE HIGH/LOW (8-C-14)

AND

2. Shift Manager's judgement that all vital DC power is lost or degraded voltages are measured at battery terminals.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 19

Loss of DC Power - Cont'd

SITE AREA EMERGENCY

LOSS OF ALL VITAL ON-SITE DC POWER FOR MORE THAN 15 MINUTES

EALs

1. Loss of both 125 VDC power sources and loss of both 250 VDC power sources as indicated by annunciators:

   DIV. I 250V DC HI-LO VOLTAGE (8-A-20); **and**
   DIV. II 125 & 250 VDC TROUBLE (20-B-09); **and**
   NO. 12 125 VDC BUS VOLTAGE HIGH/LOW (8-B-13); **and**
   NO. 11 125 VDC BUS VOLTAGE HIGH/LOW (8-C-14)

AND

2. Shift Manager or Emergency Director's judgement that all vital DC power is lost or degraded voltages are measured at battery terminals.

AND

3. 15 minute time lapse.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 20

Tornado or Sustained Winds

UNUSUAL EVENT

TORNADO ON-SITE

EALs

1a. Tornado observed to touch down within the site boundary.

OR

1b. Sustained winds above 75 MPH for greater than 10 minutes at the site.

ALERT

TORNADO STRIKING THE FACILITY

EALs

1a. Tornado strikes a vital plant structure.

OR

1b. Sustained winds above 90 MPH for greater than 10 minutes at the site.

SITE AREA EMERGENCY

SUSTAINED WINDS OR TORNADO IN EXCESS OF DESIGN LEVELS

EALs

1a. Tornado causes damage to vital plant equipment or plant structures.

OR

1b. Sustained winds above 100 MPH for greater than 10 minutes at the site.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 21

River Water Hi/Lo

UNUSUAL EVENT

RIVER WATER LEVEL IN EXCESS OF 918 FEET OR RIVER FLOW BELOW 240 CFS (approximately 902.4 FT river level)

ALERT

RIVER WATER LEVEL BETWEEN 921 AND 930 FEET OR RIVER WATER LEVEL BELOW 900.5 FT

SITE AREA EMERGENCY

RIVER WATER LEVEL EXCEEDS 930 FT OR RIVER WATER LEVEL BELOW 899 FT OR FLOOD OR LOW WATER CAUSES DAMAGE TO VITAL EQUIPMENT

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 22

Earthquake

UNUSUAL EVENT

ANY EARTHQUAKE FELT IN-PLANT OR DETECTED ON STATION SEISMIC INSTRUMENTATION AND SUBSEQUENTLY CONFIRMED BY ONE OR MORE OFF-SITE SOURCES

EALs

1a. Annunciator EARTHQUAKE ALARM (6-C-8).

OR

1b. Shift Manager's judgement.

ALERT

CONFIRMED EARTHQUAKE GREATER THAN OBE LEVELS

EAL

1. Annunciator OPERATIONAL BASIS EARTHQUAKE ALARM (6-C-13).

SITE AREA EMERGENCY

CONFIRMED EARTHQUAKE GREATER THAN DBE LEVELS AND PLANT NOT IN COLD SHUTDOWN

EALs

1. Annunciator DESIGN BASIS EARTHQUAKE ALARM (6-C-18).

AND

2. Plant not in cold shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 23

Fire

UNUSUAL EVENT

FIRE WITHIN THE PLANT NOT EXTINGUISHED WITHIN 15 MINUTES OF DETECTION

EAL

NOTE: Verification of the alarm in this context means those actions taken in the Control Room to determine that the Control Room alarm is not spurious.

1. Fire in buildings or areas contiguous to any of the following areas not extinguished within 15 minutes of Control Room notification or verification of a Control Room alarm: Reactor, Turbine, Radwaste, Plant Administrative, Intake Structure, Diesel Generator, Heating Boiler, Recombiner, EFT, Condensate Storage Tanks

ALERT

FIRE POTENTIALLY AFFECTING SAFETY SYSTEM

EALs

1. Observation that fire could affect a safety system.

AND

2. Shift Manager's judgement.

SITE AREA EMERGENCY

FIRE COMPROMISING THE FUNCTIONS OF A SAFETY SYSTEM

EALs

1. Observation of fire that affects safety systems or functions.

AND

2. Shift Manager or Emergency Director's judgement.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 24

Explosion

UNUSUAL EVENT

NEAR OR ON-SITE EXPLOSION

EALs

1. Visual observation or notification received.

AND

2. Shift Manager's judgement.

ALERT

KNOWN EXPLOSION DAMAGE TO THE FACILITY AFFECTING PLANT OPERATIONS

EALs

1. Visually observed evidence of an explosion directly affecting plant safe operation.

AND

2. Shift Manager's judgement.

SITE AREA EMERGENCY

SEVERE DAMAGE TO SAFE SHUTDOWN EQUIPMENT FROM MISSILES OR EXPLOSION

EALs

1. Plant **not** in cold shutdown.

AND

2. Shift Manager or Emergency Director's judgement.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 25

Aircraft and Missiles

UNUSUAL EVENT

AIRCRAFT CRASH ON-SITE OR SUSPICIOUS AIRCRAFT ACTIVITY OVER THE FACILITY

EAL

1. Visual observation or notification is received.

ALERT

AIRCRAFT CRASH ON THE FACILITY OR MISSILE IMPACT ON FACILITY

EAL

1. Visual observation.

SITE AREA EMERGENCY

AIRCRAFT CRASH AFFECTING VITAL STRUCTURES BY IMPACT OR FIRE, OR SEVERE DAMAGE TO SAFE SHUTDOWN EQUIPMENT FROM MISSILES OR EXPLOSION

EAL

1. As determined by Shift Manager or Emergency Director with plant **not** in cold shutdown.

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 26

Miscellaneous

UNUSUAL EVENT

TRAIN DERAILMENT ON-SITE

OR

TURBINE ROTATING COMPONENT FAILURE CAUSING RAPID PLANT SHUTDOWN

EALs

1a. Visual observation.

OR

1b. Shift Manager's judgement.

ALERT

TURBINE FAILURE CAUSING CASING PENETRATION

EALs

1a. Visual observation

OR

1b. Shift Manager's judgement.

SITE AREA EMERGENCY

Not applicable

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 27

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FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES

A. **EFFLUENT MONITORS DETECT LEVELS CORRESPONDING TO 1 REM/HR (whole body) or 5 REM/HR (thyroid) AT THE SITE BOUNDARY UNDER ACTUAL METEOROLOGICAL CONDITIONS. DOSE RATES ARE PROJECTED BASED ON OTHER PLANT PARAMETERS** (e.g., radiation levels in containment with leak rate appropriate for existing containment pressure with some confirmation from effluent monitors) **OR ARE MEASURED IN THE ENVIRONS.**

EALs

1a. Stack Effluent Monitor (Ch A or B) exceeds 2.4E+8 μCi/Sec.

OR

1b. RB Vent Effluent Monitor (Ch A or B) exceeds 9.3E+7 μCi/Sec.

OR

1c. Stack radioiodine release rate, as determined by sampling and analysis, exceeds 1.95E+5 μCi/Sec.

OR

1d. RB Vent radioiodine release rate, as determined by sampling and analysis, exceeds 2.0E+5 μCi/Sec.

OR

CAUTION

Due to temperature-induced currents, the Containment Radiation Monitor (high-range radiation monitoring) circuits could initially produce spurious high Rem/hr signal during extreme temperature heatup transient conditions and indicate a false fail signal during extreme temperature cool down transient conditions (CR19980453)

1e. Release rate projection based on Containment Radiation Monitor or Containment Sampling exceeds any of the values in 1a, 1b, 1c, or 1d above.

OR

1f. Dose rates of 1000 mrem /hr (whole body) are measured at the site boundary or beyond.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

1g. Radioiodine concentrations measured at the site boundary or beyond exceed 7.0E-6 μCi/CC.

OR

1h. Dose projection calculations, based on actual or expected meteorological conditions and source term, indicates dose rates equal to or exceeding 1000 mrem/hr (whole body) or 5000 mrem/hr (thyroid) at the site boundary or beyond.

OR

B. LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER

CLAD/COOLANT BOUNDARY FAILURE, POTENTIAL CONTAINMENT LOSS

EALs

NOTE: Failure of MSIVs to isolate constitutes a loss of both primary coolant boundary and containment. When this is combined with cladding failure, all three barriers have been lost.

1. Evidence of Fuel Cladding Degradation per Guideline 6, Alert or Site Area Emergency level.

AND

2. Failure of primary coolant boundary as evidenced by:

- High Drywell pressure; **or**
- High Drywell temperature; **or**
- Failure of MSIVs to isolate; **or**
- Safety Relief Valve stuck open; **or**
- GAP activity in primary containment atmosphere; **or**
- Failure of Scram Discharge Volume valves to isolate

AND

3. Potential loss of containment as evidenced by:

- Containment temperature or pressure approaching design limits (281°F and 56 psig) and increasing; **or**
- Loss of containment cooling; **or**
- Failure of Scram Discharge Volume valves to isolate; **or**
- Shift Manager or Emergency Director's judgement that loss of containment is likely.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

C. LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER

CLAD/CONTAINMENT FAILURE, POTENTIAL COOLANT BOUNDARY LOSS

NOTE: In either of the following situations loss of containment should be judged to be likely:

- **Small or large LOCA with failure of ECCS to perform, or**
- **Loss of requisite decay heat removal systems (RHR and other heat sinks) following shutdown.**

EALs

1. Evidence of Fuel Cladding Degradation per Guideline 6, Alert or Site Area Emergency level.

AND

2a. Failure of containment as evidenced by **all** containment penetrations required for isolation not valved off or closed.

OR

2b. Shift Manager or Emergency Director's judgement that containment has failed.

AND

3. Potential loss of primary coolant boundary as evidenced by reactor pressure near design limits (1210 psig measured in the steam dome @ 575°F) and increasing **or** loss of all ECCS.

OR

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

D. LOSS OF 2 OF 3 FISSION PRODUCT BARRIERS WITH A POTENTIAL LOSS OF 3RD BARRIER

CONTAINMENT/COOLANT BOUNDARY FAILURE, POTENTIAL CLAD FAILURE

EALs

NOTE: Failure of MSIVs to isolate constitutes a loss of both primary coolant boundary and containment. When this is combined with cladding failure, all three barriers have been lost.

1a. Failure of containment as evidenced by **all** containment penetrations required for isolation not valved off or closed.

OR

1b. Shift Manager or Emergency Director's judgement that containment has failed.

AND

2. Failure of primary coolant boundary as evidenced by:

- High Drywell pressure; **or**
- High Drywell temperature; **or**
- Failure of MSIVs to isolate; **or**
- Safety Relief Valve stuck open; **or**
- GAP activity in primary containment atmosphere; **or**
- Failure of Scram Discharge Volume valves to isolate

AND

3a. Potential loss of cladding as evidenced by loss of all ECCS

OR

3b. Reactor water level < TAF (-126") and decreasing.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 28

General Emergency - All GUIDELINES - Cont'd

E. **LOSS OF PHYSICAL CONTROL OF THE PLANT**

F. **OTHER PLANT CONDITIONS EXIST, FROM WHATEVER SOURCE, THAT MAKE RELEASE OF LARGE AMOUNTS OF RADIOACTIVITY IN A SHORT TIME PERIOD POSSIBLE** (e.g. any core melt situation, see example BWR sequences).

EXAMPLE BWR SEQUENCES

1. Transient (e.g., loss of off-site power) plus failure of requisite core shutdown systems (e.g., scram or standby liquid control system). Could lead to core melt in several hours with containment failure likely. More severe consequences if pump trip does not function.

2. Small or large LOCAs with failure of ECCS to perform, leading to core degradation or melt in minutes to hours. Loss of containment integrity may be imminent.

3. Small or large LOCA occurs and containment performance is unsuccessful affecting longer term success of the ECCS. Could lead to core degradation or melt in several hours without containment boundary.

4. Shutdown occurs but requisite decay heat removal systems (e.g., RHR) or non-safety systems heat removal means are rendered unavailable. Core degradation or melt could occur in about ten hours with subsequent containment failure.

G. **ANY MAJOR INTERNAL OR EXTERNAL EVENTS (E.G., FIRES, EARTHQUAKES, SUBSTANTIALLY BEYOND DESIGN BASIS) WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO PLANT SYSTEMS RESULTING IN ANY OF THE ABOVE (A-F).**

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 29

Other Plant Conditions

UNUSUAL EVENT

NOTE: For plant conditions which require plant shutdown under Technical Specifications, the Unusual Event *SHALL* be declared no later than the time at which the LCO-specified action statement time period elapses. The Unusual Event may be declared earlier at the discretion of the Shift Manager or Emergency Director.

PLANT CONDITIONS EXIST REQUIRING SHUTDOWN UNDER TECHNICAL SPECIFICATION REQUIREMENTS **AND** INABILITY TO REACH REQUIRED OPERATING MODE WITHIN TECHNICAL SPECIFICATION TIME LIMITS.

OR

PLANT CONDITIONS EXIST THAT WARRANT INCREASE AWARENESS ON THE PART OF PLANT OPERATING STAFF OR STATE AND/OR LOCAL OFF-SITE AUTHORITIES.

OR

OTHER CONDITIONS EXIST WHICH IN THE JUDGEMENT OF THE SHIFT MANAGER OR EMERGENCY DIRECTOR INDICATE A POTENTIAL DEGRADATION OF THE LEVEL OF SAFETY OF THE PLANT.

ALERT

PLANT CONDITIONS EXIST THAT WARRANT PRECAUTIONARY ACTIVATION OF THE TECHNICAL SUPPORT CENTER AND PLACEMENT OF THE EMERGENCY OPERATIONS FACILITY AND OTHER KEY EMERGENCY PERSONNEL ON STANDBY

SITE AREA EMERGENCY

OTHER PLANT CONDITIONS EXIST THAT WARRANT ACTIVATION OF THE EMERGENCY RESPONSE CENTERS AND MONITORING TEAMS

GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.2 Emergency Classification Guidelines - Cont'd

GUIDELINE 30

Major Damage to Spent Fuel

UNUSUAL EVENT

Not applicable

ALERT

FUEL DAMAGE ACCIDENT WITH RELEASE OF RADIOACTIVITY TO CONTAINMENT

EALs

1. Dropping, bumping or otherwise rough handling of a spent bundle or individual fuel rods.

AND

2. Annunciator FUEL POOL RADIATION MONITOR CH A or B (5-A-1 or 5-A-2) exceeds 50 mrem/hr.

SITE AREA EMERGENCY

MAJOR DAMAGE TO SPENT FUEL IN CONTAINMENT (e.g., large object damages fuel or water loss below fuel level)

EALs

1a. Decrease in fuel pool level below 36'9" indicated by LS-2787, SPENT FUEL POOL LEVEL HI/LO ALARM on Panel C-65.

OR

1b. Dropping a heavy object onto spent fuel confirmed by direct observation.

AND

2. Annunciator FUEL POOL RADIATION MONITOR CH A or B (5-A-1 or 5-A-2) exceeds 50 mrem/hr.

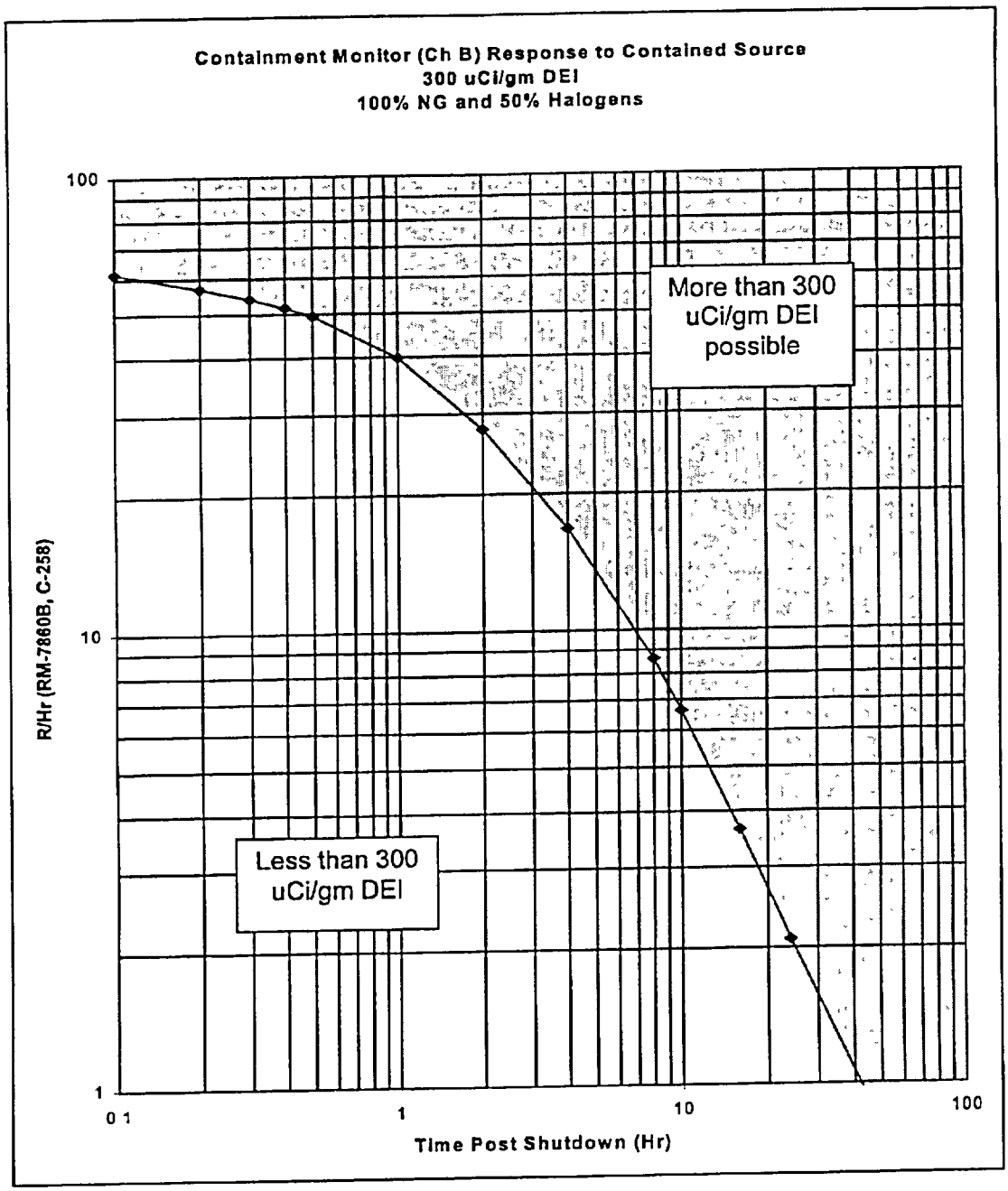
GENERAL EMERGENCY

As specified in GUIDELINE 28.

FIGURE

7.3 Containment Monitor Response To Contained Source Curve

Containment Monitor Response To Contained Source
300 uCi/gm DEI
100% NG and 50% Halogens



Basis for Containment Monitor Response Curve

Containment radiation monitoring is accomplished with two detectors. Each is located near one of the 28" recirc suction lines. The A Containment Monitor (azimuth 180°) response is complicated by its proximity to the steam lines which exit the drywell directly below it. Therefore, the B channel geometry (azimuth 0°) was used to generate the response curve.

The purpose of the response curve is to show the minimum Containment Monitor response to a fuel clad degradation condition indicated by a coolant concentration of 300 uCi/gm DEI.

Assumptions:

- The only radiation source is an 18-foot vertical section of the 28" diameter "A" Recirc suction line (933' to 951' level).
- The source is totally contained, i.e., no significant airborne radioactive material.
- Noble gases would be present in proportion to the radioiodine concentration (300 uCi/gm DEI), assuming that for each fuel rod with cladding damage, 100% of the noble gases and 50% of the radioiodines are released to the coolant.

Givens:

- The detector is located 110 inches horizontally from the outer diameter of the A Recirc suction line. Distance used in calculation is 124 inches from detector to center of source.
- The detector is located at 944' level.
- Shielding consists of 1" of steel (pipe wall).