



Prairie Island Nuclear Generating Plant
Nuclear Management Company, LLC
1717 Wakonade Dr. East • Welch MN 55089

February 27, 2003

L-PI-03-018
10 CFR 50.4

US Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
DOCKET NOS. 50-282 AND 50-306
LICENSE NOS. DPR-42 AND DPR-60
PRAIRIE ISLAND EMERGENCY PLAN IMPLEMENTING PROCEDURES

Furnished with this letter are the recent changes to the Prairie Island Nuclear Generating Plant(PINGP) Emergency Plan Implementing Procedures. This submittal includes the following documents:

INDEXES:

Emergency Plan Implementing Procedures Table of Contents

REVISIONS:

F3-2 Classifications of Emergencies

Rev. 32

DELETIONS:

None

INSTRUCTIONS:

Instructions for updating the manual are included.

As per 10 CFR 50.4, two copies have also been provided to the Regional III Office and one to the NRC Resident Inspector. The Nuclear Management Company has not made new or revised existing Nuclear Regulatory Commission commitments in this letter or the attachments.

If you have any questions, please contact Mel Agen at 651-388-1121 Ext. 4240.



Joseph M. Solymossy
Site Vice President, Prairie Island Nuclear Generating Plant

CC Steve Orth, USNRC, Region III (2 copies)
NRC Resident Inspector-Prairie Island Nuclear Generating Plant
(w/o attachment)

A045

Attachment: PINGP Emergency Plan Implementing Procedure F3-2; Rev. 32

PRAIRIE ISLAND NUCLEAR GENERATING PLANT	Title: Emergency Plan Implementing Procedures TOC Effective Date : 02/13/03
Approved By: <u>Jayce Chitty /BZ</u> BPS Supt	

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PRAIRIE ISLAND NUCLEAR
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Procedures TOC

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- REFERENCE USE**
- *Procedure segments may be performed from memory.*
 - *Use the procedure to verify segments are complete.*
 - *Mark off steps within segment before continuing.*
 - *Procedure should be available at the work location.*

O.C. REVIEW DATE: 021003 SC	OWNER: M. Werner	EFFECTIVE DATE 2-13-03
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LIST OF ATTACHMENTS

Attachment 1 – Summary of Emergency Action Levels

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1.0 PURPOSE

The purpose of this procedure is to specify the Emergency Action Levels that indicate an emergency condition exists and to properly classify the emergency into one of the four graded levels of emergency classifications. This procedure partially satisfies the requirement of 10CFR50.47 concerning the existence of an emergency classification and action level scheme.

2.0 APPLICABILITY

This instruction **SHALL** apply to all Shift Managers (SM), Shift Supervisors (SS), Control Room Operators (CRO), Emergency Directors (ED) and Emergency Manager (EM).

3.0 PRECAUTIONS

- 3.1 Attempt to verify the indications by checking secondary or coincident indicators.
- 3.2 An emergency classification should be made based on current plant conditions described in Attachment 1 of this procedure.
- 3.3 These emergency classifications do not apply to offsite transportation incidents that do NOT affect safe operation of the plant. Currently, the Radiation Protection group is responsible for offsite transportation incident assessment involving plant related shipments.
- 3.4 Rapidly Escalating Then De-escalating Events
 - 3.4.1 In the case of an event that rapidly escalates then de-escalates or begins at a higher emergency class then rapidly de-escalates, the initial emergency classification should be based on current plant conditions.
 - 3.4.2 During initial notifications to the NRC, the NRC should be informed of the current emergency classification and also the highest emergency classification reached during the course of the event. Emphasize the current emergency classification.

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3.4.3 It may be discovered that a condition existed which met the emergency plan criteria but no emergency was declared and the basis for the emergency class no longer exists at the time of this discovery. 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. The NRC staff does not consider actual declaration of the emergency class to be necessary in these circumstances; an ENS notification (or an ENS update if the previously reported event was misclassified) within one hour of the discovery of the undeclared (or misclassified) event provides an acceptable alternative.

3.5 Continuously monitor the Control Room instrumentation, radiation monitors, or any other developments which would be indicative of further system degradation. Be prepared to escalate to a more severe emergency classification.

4.0 RESPONSIBILITIES

4.1 Duty Shift Manager has the responsibility to authorize the initial emergency classification.

4.2 Shift Supervisor of the unaffected unit has the responsibility to assist the Shift Manager as necessary including authorization of an emergency classification.

4.3 Shift Supervisor of the affected unit has the responsibility to direct activities related to the operation of the affected unit.

4.4 Emergency Director has the responsibility to authorize an emergency classification whenever an Alert, Site Area, or General Emergency is declared and the EOF is not activated.

4.5 If the EOF is activated and fully functional, the Emergency Manager has the responsibility to authorize an emergency classification.

4.6 Control Room Operators and affected unit Shift Supervisor have the responsibility to assist the Shift Manager or unaffected unit Shift Supervisor in the identification and verification of control board indications.

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5.0 DISCUSSION

5.1 Definitions

- 5.1.1** Notification of Unusual Event – events that 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.

- 5.1.2** Alert – events are in progress or have occurred which involve actual or potential substantial degradation of the level of safety of the plant. It is the lowest level of emergency classification when some necessity for emergency planning and offsite response is necessary.

Any releases expected are limited to small fractions of the EPA Protective Action Guideline exposure levels.

- 5.1.3** Site Area Emergency – events are in progress or have occurred which involve actual or likely major failure of plant functions needed for protection of the public.

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

- 5.1.4** General Emergency – events are in progress or have occurred which involve actual or imminent substantial core degradation or melting with a potential for loss of containment integrity.

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

- 5.1.5** Emergency Action Levels (EAL) – specific instrument readings, surface or airborne contamination levels or radiation dose rates that designate a specific emergency class requiring emergency measures for that class.

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5.1.6 Safety System(s) – refers to systems that are required to be functional during and following a design basis accident or transient to ensure the capability to shut down the reactor and maintain it in a safe condition; or the capability to prevent or mitigate the consequences of accidents, which could result in off-site exposures comparable to the guidelines of 10CFR100; or the integrity of the Reactor Coolant System pressure boundary. The structures and components of a Safety System are “Safety Related SSC.”

5.2 Emergency Action Levels

Attached to this procedure is a Summary of Emergency Action Levels, Attachment 1. This summary identifies the four emergency classifications, the initiating condition(s), emergency action levels for each classification, and, where applicable, specific instruments and indications to be used to detect and classify an emergency.

The emergency action levels for each classification and the instrument readings and indications listed do not reflect a complete list of instrumentation that will show abnormal indications but does list those key parameters useful in classifying the event.

The Summary of Emergency Action Levels lists are based on the initiating conditions as required by Appendix 1 of NUREG-0654, accidents analyzed in the Prairie Island USAR, and the NRC Branch Position on Acceptable Deviations From NUREG-0654/ FEMA-REP-1, July 11, 1994.

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5.3 The Emergency Classification/Declaration/Implementation Process

There are three distinct phases to consider: Classification, Declaration and Implementation.

5.3.1 Classification:

The act of **assessing** the EALs to determine the appropriate classification which the ongoing events are categorized. Assessing and classifying an event should be accomplished within a 15 minute period following the availability of indications that an emergency condition exists. This assessment period is consistent with the NRC Branch Position on Timeliness of Classification of Emergency Conditions, EPPOS No. 2.

5.3.2 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 offsite notification clock starts.

5.3.3 Implementation:

The act of **making the notification and/or augmentation** of the emergency organizations.

5.3.4 Ideally, the Emergency Notification Report Form (PINGP 577) should be filled out to near completion while the classification phase is being conducted. Once the declaration is made by the SM/ED/EM, the 15-minute offsite notification time starts. The SM/ED/EM should review the contents of the Emergency Notification Report Form (PINGP 577) to ensure its completeness, verify the correct declaration time and then sign the form which gives permission to the Shift Emergency Communicator (or Offsite Communicator in EOF) to implement the E-Plan notifications.

5.3.5 Per 10CFR50.72 (a)(3) NRC notification is required immediately after the notification of the state and local agencies (which is completed within about 15 minutes) and not later than one hour after the emergency declaration.

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5.4 Technical Specification Required Shutdown NUES

- 5.4.1 In some cases, exceeding Technical Specification limits (e.g., RCS leakage, reactor coolant activity, etc.) is considered to be precursors to more serious events and warrant declaration of an NUE.
- 5.4.2 In other cases, exceeding Technical Specification limits for the period designated in the T.S. ACTIONS Table is an analyzed condition of the plant and does not, by itself, represent an emergency. These events are reportable in accordance with 10 CFR 50.72 as a non-emergencies.

However, if the plant is not brought to the required operating mode within the allowable Technical Specifications action statement time limit T.S. ACTIONS Table COMPLETION Time, then a declaration of an Unusual Event should be declared.

- 5.4.3 With regard to Emergency Plan classifications, Operations should handle Technical Specification required shutdown in the following manner:
 - A. The conditions of the plant should come first. That is, if the condition warrants initiating power reduction immediately, do so. The E-Plan classification can appropriately follow.
 - B. Following the initiation of the reduction in power or temperature, the classification phase of the E-Plan is started. Review of the EALs should be done to assess for proper classification. Once the Shift Manager has determined the appropriate classification for the event, the Shift Manager should declare the classification and note the time of declaration (this begins the 15-minute offsite notification clock).

This classification phase should be done within a reasonable time frame determined by the circumstances (within 15 minutes for most instances).

- C. Once the declaration is made, the Shift Manager should review the contents of the Emergency Notification Report Form (PINGP 577) to ensure its completeness, verify the correct declaration time and then sign the form which gives permission to the Shift Emergency Communicator to implement the E-Plan notifications.

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5.5 Rapidly Escalating then De-escalating Events

In the case of an event that rapidly escalates then de-escalates or begins at a higher emergency class then rapidly de-escalates, the initial emergency classification should be based on current plant conditions.

It may be discovered that a condition existed which met the emergency plan criteria but no emergency was declared and the basis for the emergency class no longer exists at the time of this discovery. 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. The NRC staff does not consider actual declaration of the emergency class to be necessary in these circumstances; an ENS notification (or an ENS update if the previously reported event was misclassified) within one hour of the discovery of the undeclared (or misclassified) event provides an acceptable alternative.

The NRC should be informed of the current emergency classification and the highest emergency classification reached during the course of the event during the initial NRC notification via the ENS phone. The Shift Manager should ensure that this notification be performed by an appropriate individual other than the SEC using PINGP Form 666, Event Notification Worksheet. To avoid possible confusion, other offsite authorities will be informed of the current classification during the initial notification and then given the full description of the highest emergency classification reached during the first update on the follow-up notification.

5.6 The Emergency Action Level Reference Manual Number

Prairie Island Nuclear Generating Plant has prepared a written manual (EAL Reference Manual) to provide general information about Emergency Action Levels to offsite authorities who are involved in nuclear plant emergency planning. This manual provides a description with text and drawings of the various conditions that might cause the Prairie Island Nuclear Generating Plant to classify an event. By understanding what a particular condition or event means, emergency workers at the various offsite agencies should develop a clear idea of what is occurring at the plant during the emergency.

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Each initiating condition in this procedure is followed by a cross reference number that corresponds to the appropriate classification condition in the EAL Reference Manual. When the Emergency Notification Report Form (PINGP 577) is completed, the initiating condition statement and the EAL Reference Manual cross reference number should be included on the form by using the label from "Emergency Initiating Conditions Labels – PINGP 1189" or writing this information as it appears in the shaded box on the appropriate page in the Summary of Emergency Action Levels.

6.0 PREREQUISITES

An off-normal condition corresponding to one of the initiating events described in Attachment 1 of this procedure is occurring or has occurred.

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7.0 PROCEDURE

- 7.1 Any significant event that may be classified as an emergency condition **SHALL** be reported to the Shift Supervisor, Shift Manager and/or Emergency Director immediately.

NOTE	The events may be instrumentation readings or visual observations made by plant personnel.
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- 7.2 Attempt to verify the initial indication by comparing the indication to redundant instrument channels or to other related parameters, visual observations, and field reports as applicable.
- 7.3 The Shift Manager, unaffected Shift Supervisor or Emergency Director **SHALL** assess the situation and determine the emergency classification, using the guidelines of Attachment 1.
- 7.4 In those cases when an event rapidly escalates, then de-escalates or begins at a higher classification, then rapidly de-escalates, the initial emergency classification should be based on current plant conditions.
- 7.4.1 Inform the NRC of the current emergency classification and the highest emergency classification reached during the course of the event during the initial NRC ENS notification.
- 7.4.2 It may be discovered that a condition existed which met the emergency plan criteria but no emergency was declared and the basis for the emergency class no longer exists at the time of this discovery. 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. The NRC staff does not consider actual declaration of the emergency class to be necessary in these circumstances; an ENS notification (or an ENS update if the previously reported event was misclassified) within one hour of the discovery of the undeclared (or misclassified) event provides an acceptable alternative.

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- 7.5 The Shift Supervisor of the affected unit should take immediate actions, using applicable plant operating procedures to return the plant to normal (or Mode 5, Cold Shutdown, if determined to be necessary).
- 7.6 If the EOF is not activated, the Shift Manager or Emergency Director **SHALL** declare the appropriate emergency classification and perform actions as specified in the appropriate responsibility procedure applicable to emergency classification:
- 7.6.1 For a Notification of Unusual Event, proceed to F3-3.
- 7.6.2 For an Alert, Site or General Emergency, proceed to F3-4.
- If the EOF is activated, contact the Emergency Manager for consultation on whether or not to change the emergency classification. The Emergency Director is responsible to formulate the new classification while the Emergency Manager is responsible to authorize the reclassification.
- 7.7 Continue to assess and watch for changing parameters or visual indication of further system degradation and be prepared to escalate to a more severe emergency classification as indicated by the Emergency Action Levels in Attachment 1.
- 7.8 As plant conditions stabilize during a Notification of an Unusual Event (NUE) or Alert, consider terminating the event classification.
- 7.8.1 For the NUE and Alert classifications, the event may be terminated once the following criteria are met:
- A. The plant is in stable condition with at least one fission product barrier intact, and
 - B. Radioactive gaseous and liquid effluent are being controlled within the following limits:
 - 1. Gaseous effluent release rates (or resulting dose rates) are within plant limits as defined in Section 3.1 of H4, Offsite Dose Calculation Manual (ODCM), and

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2. Liquid effluent release rates (or resulting concentrations) are within the plant limits as defined in "Old 10CFR20 Appendix B in Table II, Column 2 (April 1992)" located in H4, ODCM, Table 4.3 and and

C. The potential for future degradation of plant conditions is small.

7.8.2 Termination of an NUE classification may be performed by the Shift Manager. Review of 5AWI 1.13.0, Plant Event Investigation and Recovery, should be completed to determine if this procedure needs to be implemented and the Plant Manager informed of the review.

7.8.3 Termination of an Alert classification may be performed by the Emergency Director if the EOF is not activated. Once the EOF is fully functional, the Emergency Manager **SHALL** terminate the Alert classification when the conditions are met for termination.

7.8.4 Termination of an Alert classification includes the dismissal of the site Emergency Response Organization. Any necessary in-plant or on-site follow-up activities should be coordinated and managed by the normal plant site organization. In some cases, conditions may require the establishment of a Recovery Organization in which case the Emergency Director and Emergency Manager should make this determination based on the extent of damage or other considerations. In this case 5AWI 1.13.0 should be reviewed and implemented as determined appropriate.

7.9 As plant conditions stabilize during a Site Area or General Emergency, consider transition to the Recovery phase.

NOTE:	If the Site Area Emergency event does not require significant repairs or analysis beyond the capabilities of the normal plant site organization and the conditions of 7.8.1. A, B, & C are met, then the Site Area Emergency may be terminated without a transition to Recovery. However review and implementation of 5AWI 1.13.0 should be completed as appropriate.
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Transition to Recovery should be directed by the Emergency Manager with coordinated recovery planning by the site Emergency Response Organization. See F3-30, "Recovery", for instruction on transition to Recovery. Review and implementation of 5AWI 1.13.0 should be completed as appropriate.

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**SUMMARY
OF
EMERGENCY ACTION LEVELS**

<p>NOTE:</p>	<p>Definition of logic symbols:</p> <p>AND symbol = </p> <p>OR symbol = </p>
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INITIATING CONDITION INDEX

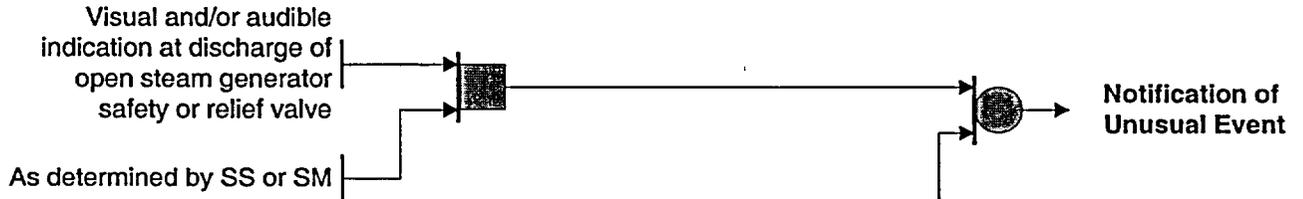
<u>No.</u>	<u>Condition Description</u>	<u>Page</u>
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Condition 1 : Safety System Functions

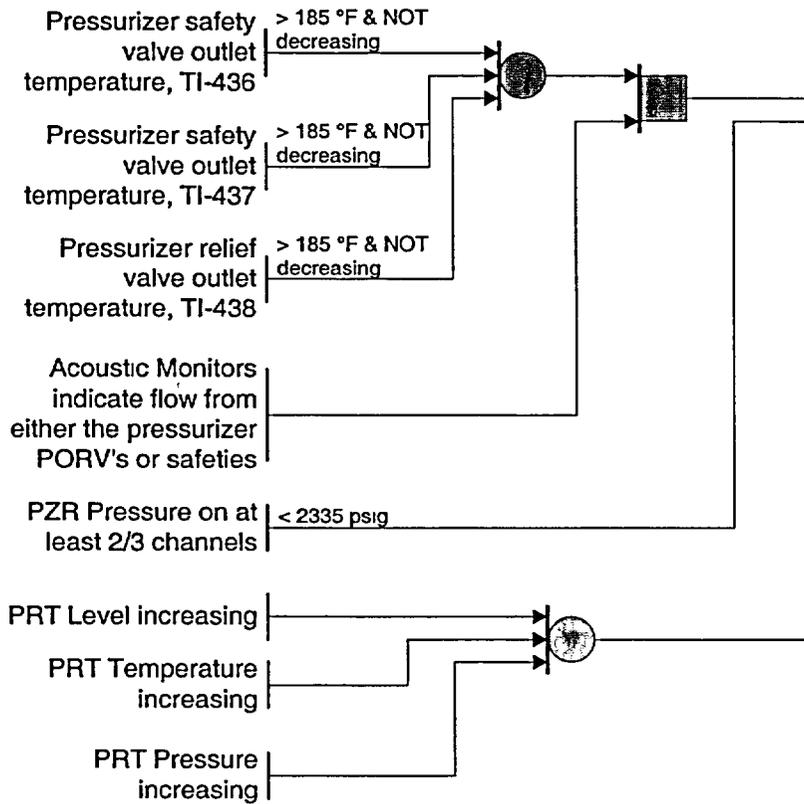
Failure of a safety or relief valve in a safety related system to close following reduction of applicable pressure.

(EAL Ref Manual 1B)

SG safety or relief valve opens and fails to reset



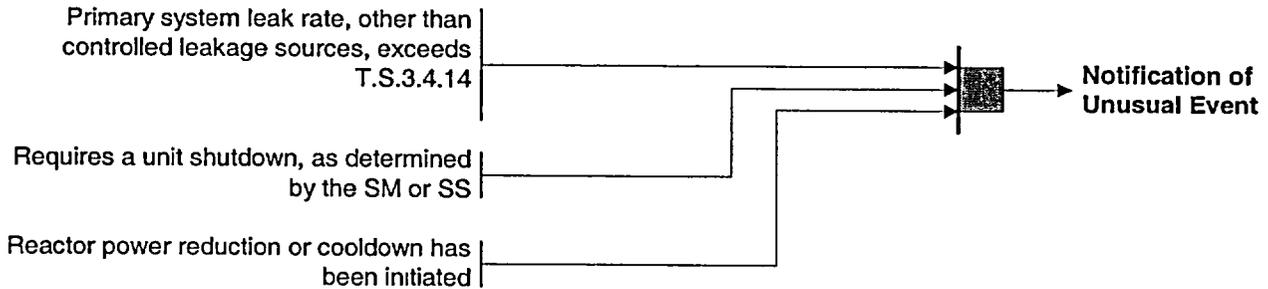
PZR safety or relief valve opens and then fails to reset



Condition 2: Abnormal Primary Leak

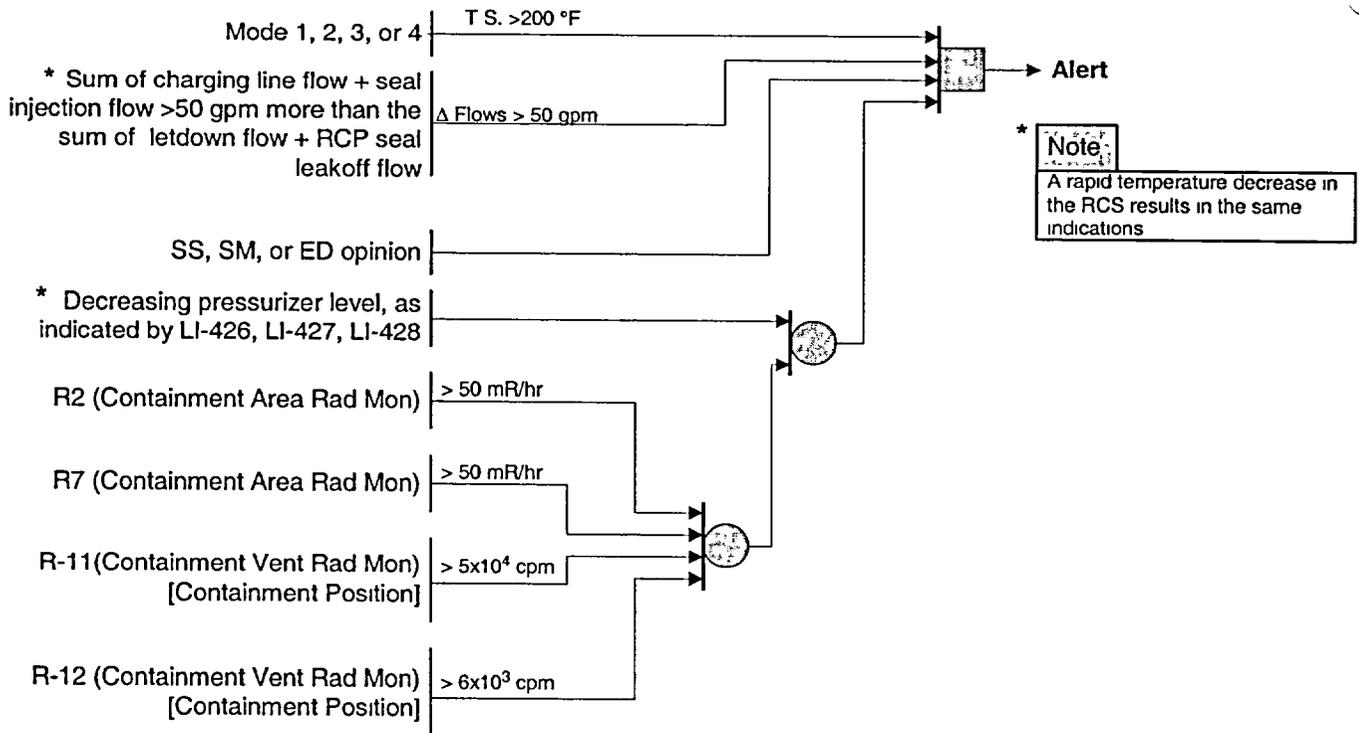
Primary system leak rate from unidentified or uncontrolled sources exceeding Technical Specifications.

(EAL Ref Manual 2A)



Primary coolant leak rate greater than 50 gpm.

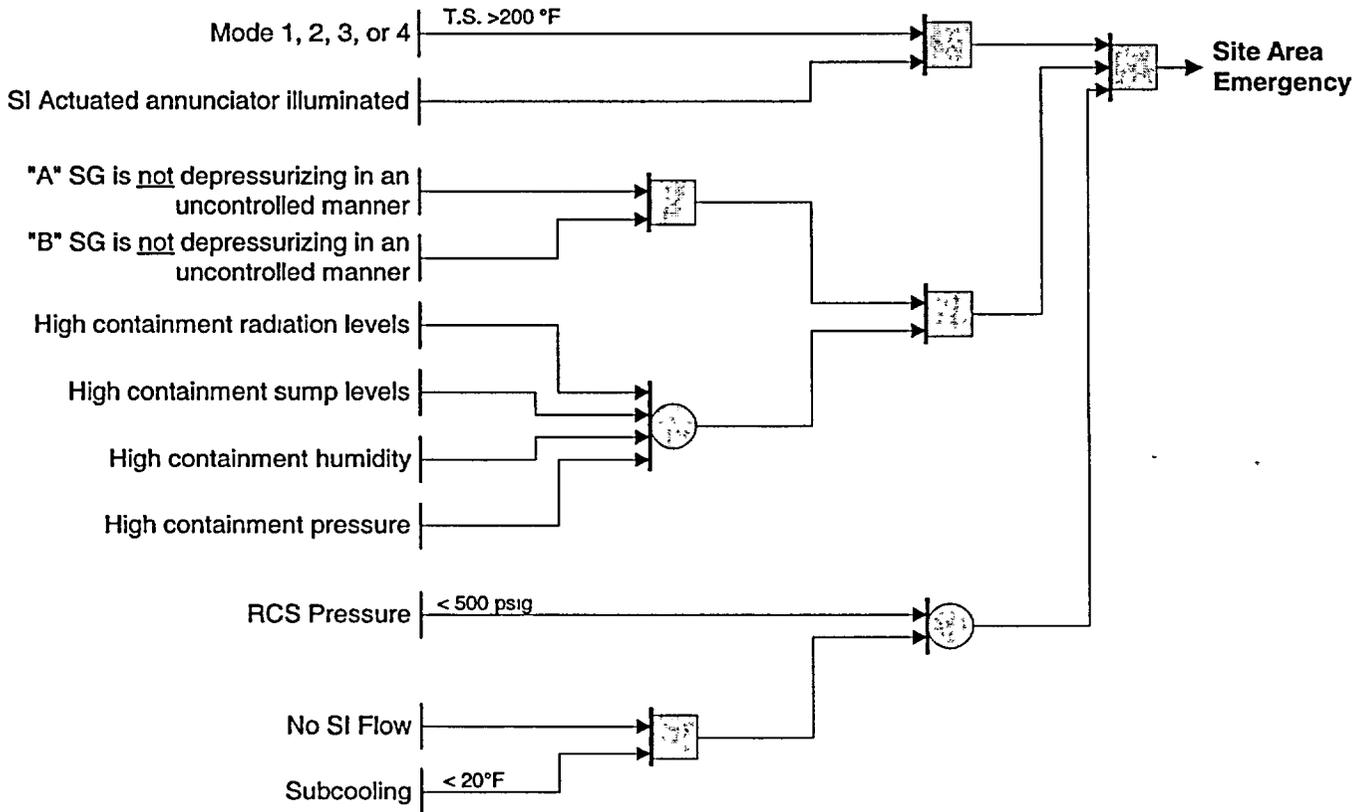
(EAL Ref Manual 2B)



Condition 2: Abnormal Primary Leak

LOCA with leak rate in excess of available pump capacity.
(Small LOCA with failure of SI or Large LOCA greater than
SI flow.)

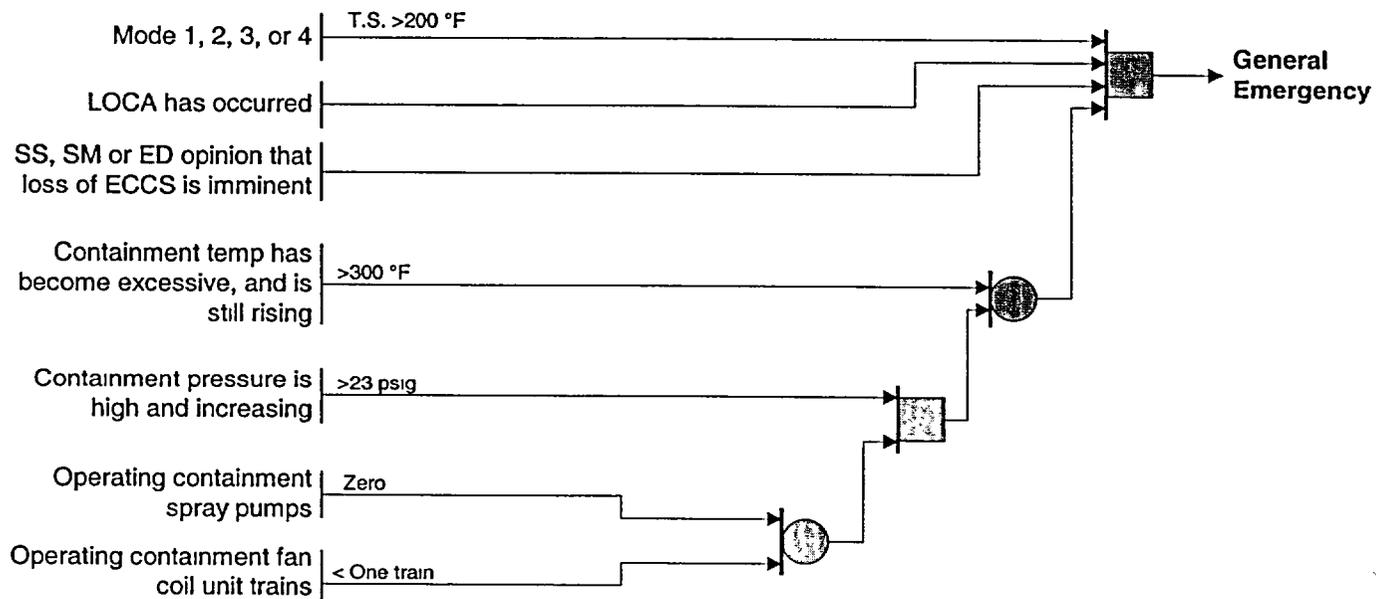
(EAL Ref Manual 2C)



Condition 2: Abnormal Primary Leak

Small LOCA and initially successful ECCS. Subsequent failure of containment heat removal systems over several hours could lead to core melt and likely failure of containment.

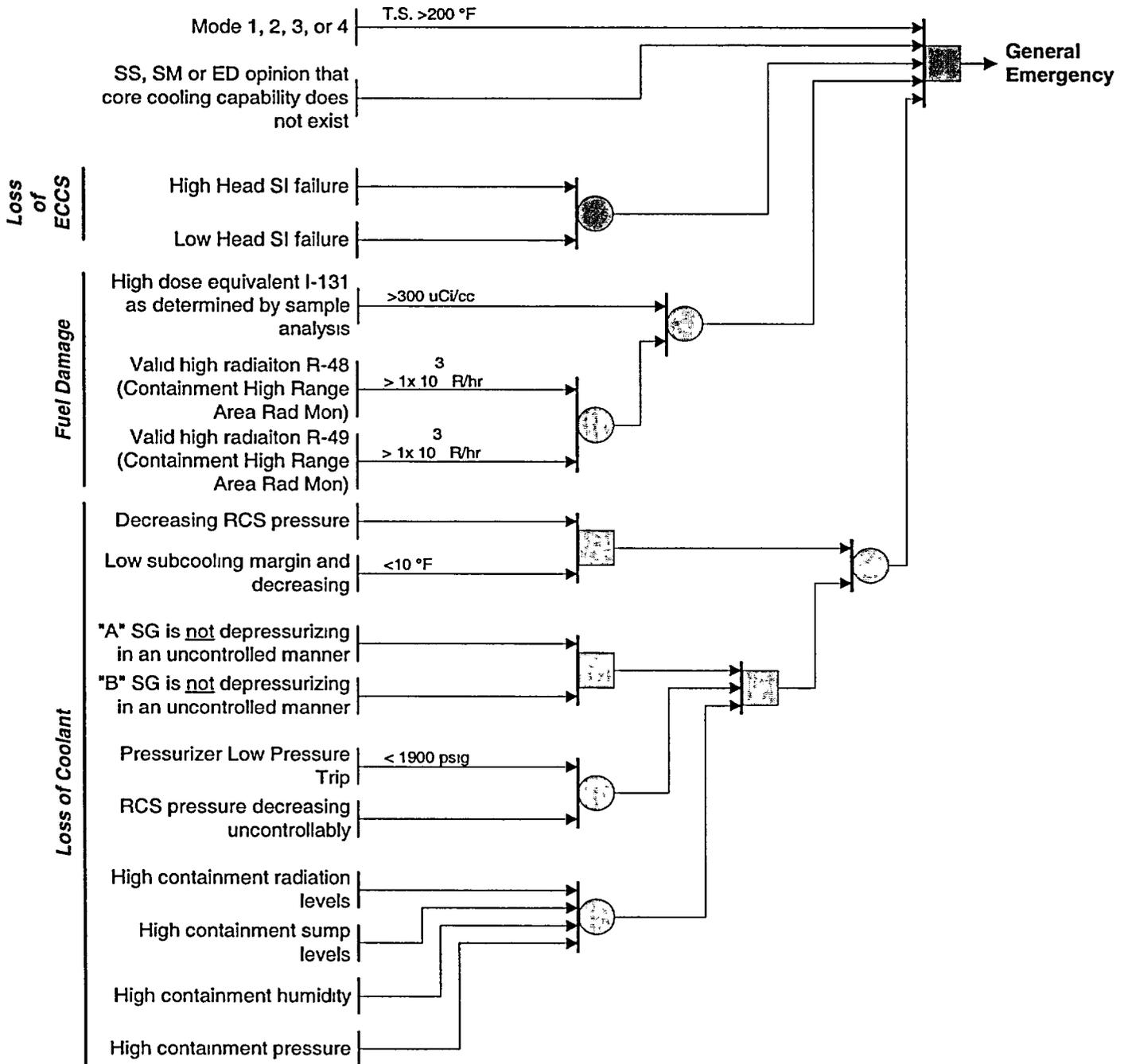
(EAL Ref Manual 2D)



Condition 2: Abnormal Primary Leak

Small and large LOCA's with failure of ECCS to perform leading to severe core degradation or melt in from minutes to hours. Ultimate failure of containment likely for melt sequences.

(EAL Ref Manual 2E)



Condition 3 : Abnormal Coolant Temperature/Pressure

DELETED

Deleted based on NRC Branch Position On Acceptable Deviations From Appendix 1 to NUREG-0654/FEMA-REP-1, July 11, 1994.

Condition 4 : Abnormal Primary / Secondary Leak

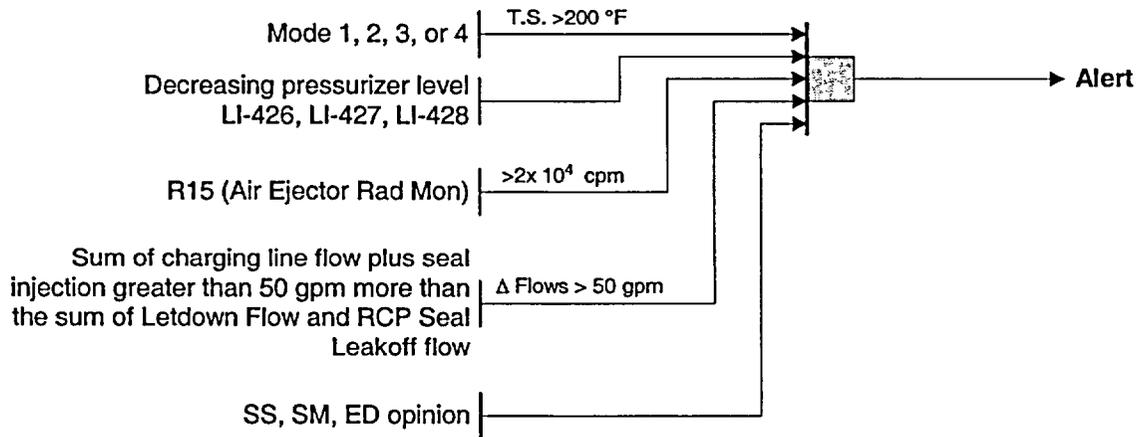
Primary /Secondary leak rate exceeding Technical Specifications

(EAL Ref Manual 4A)



Primary /Secondary leak rate greater than 50 gpm.

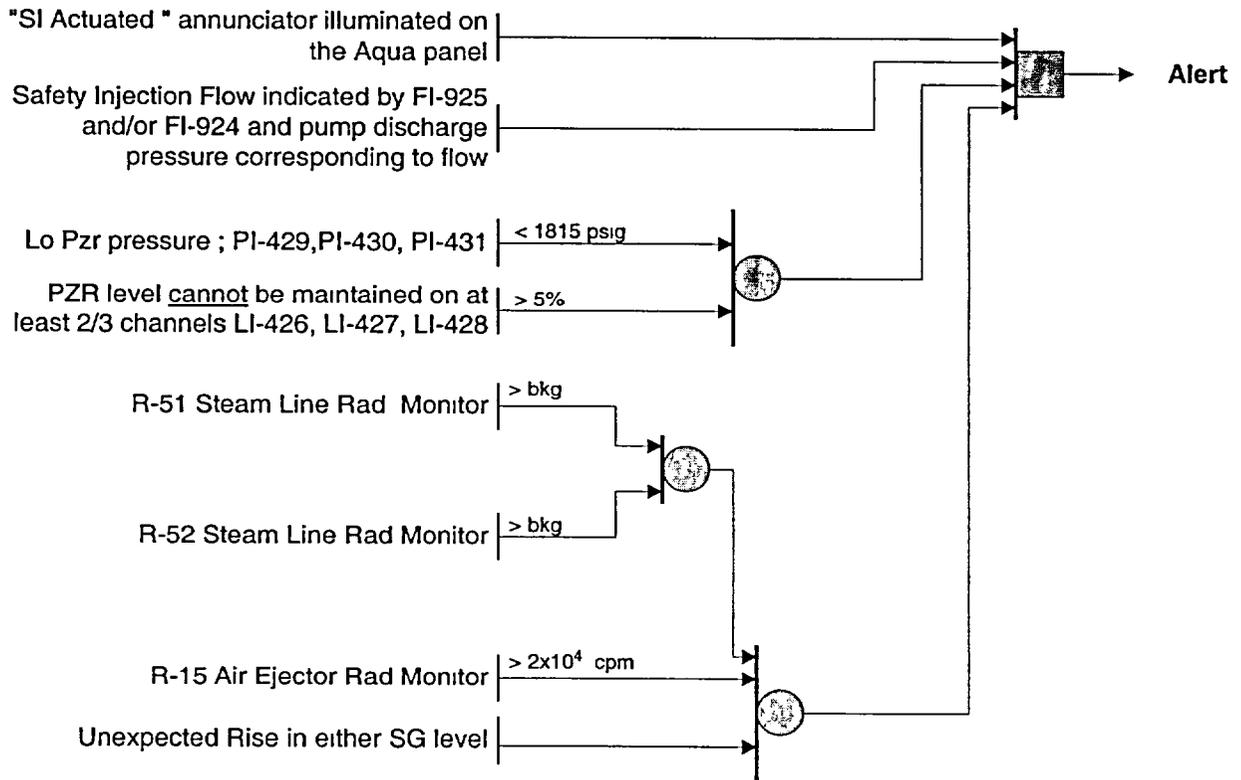
(EAL Ref Manual 4B)



Condition 4 : Abnormal Primary /Secondary Leak

Failure of steam generator tube(s) resulting in ECCS actuation.

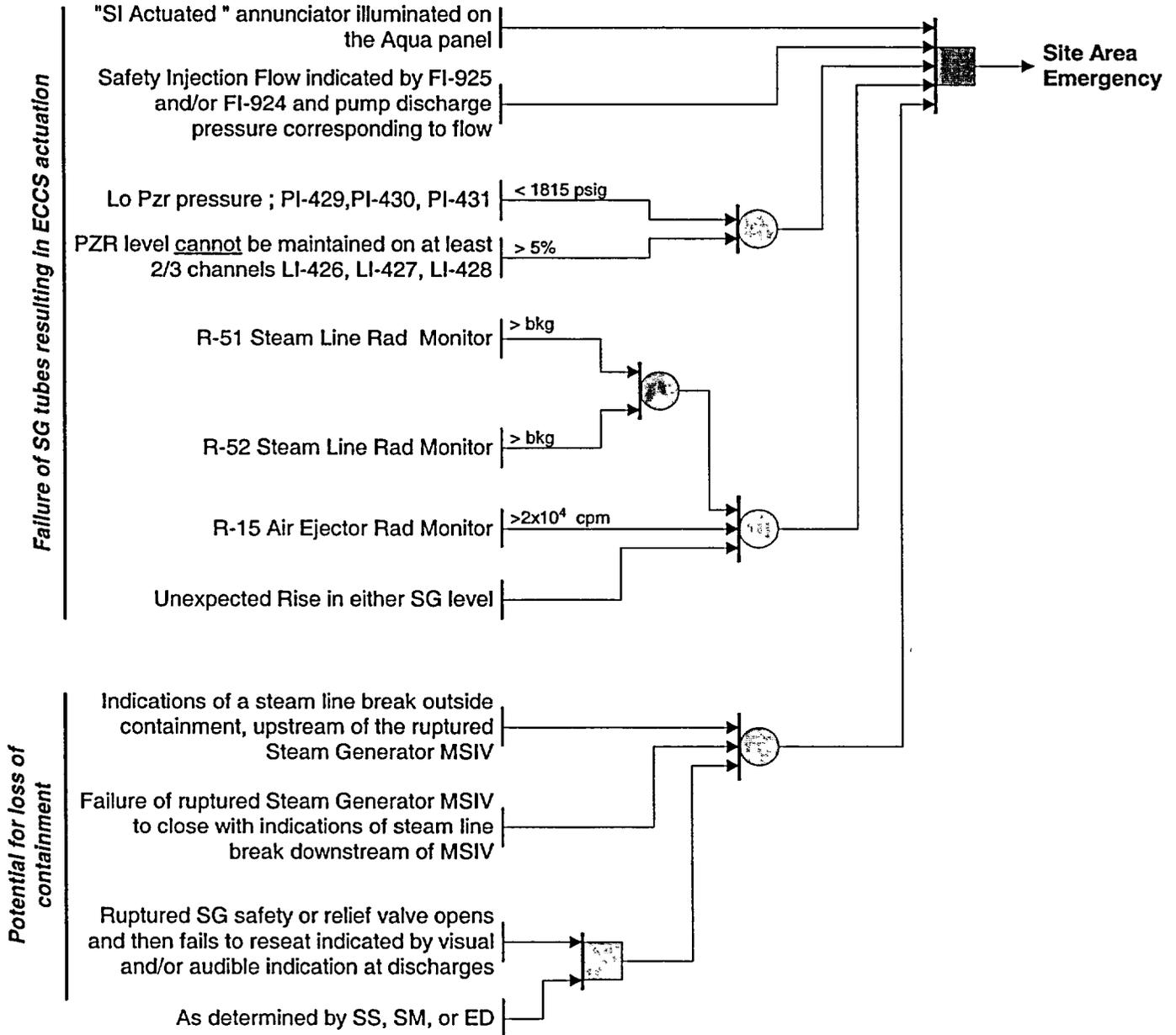
(EAL Ref Manual 4C)



Condition 4 : Abnormal Primary /Secondary Leak

Failure of steam generator tube(s) resulting in ECCS actuation and high potential for loss of containment.

(EAL Ref Manual 4D)

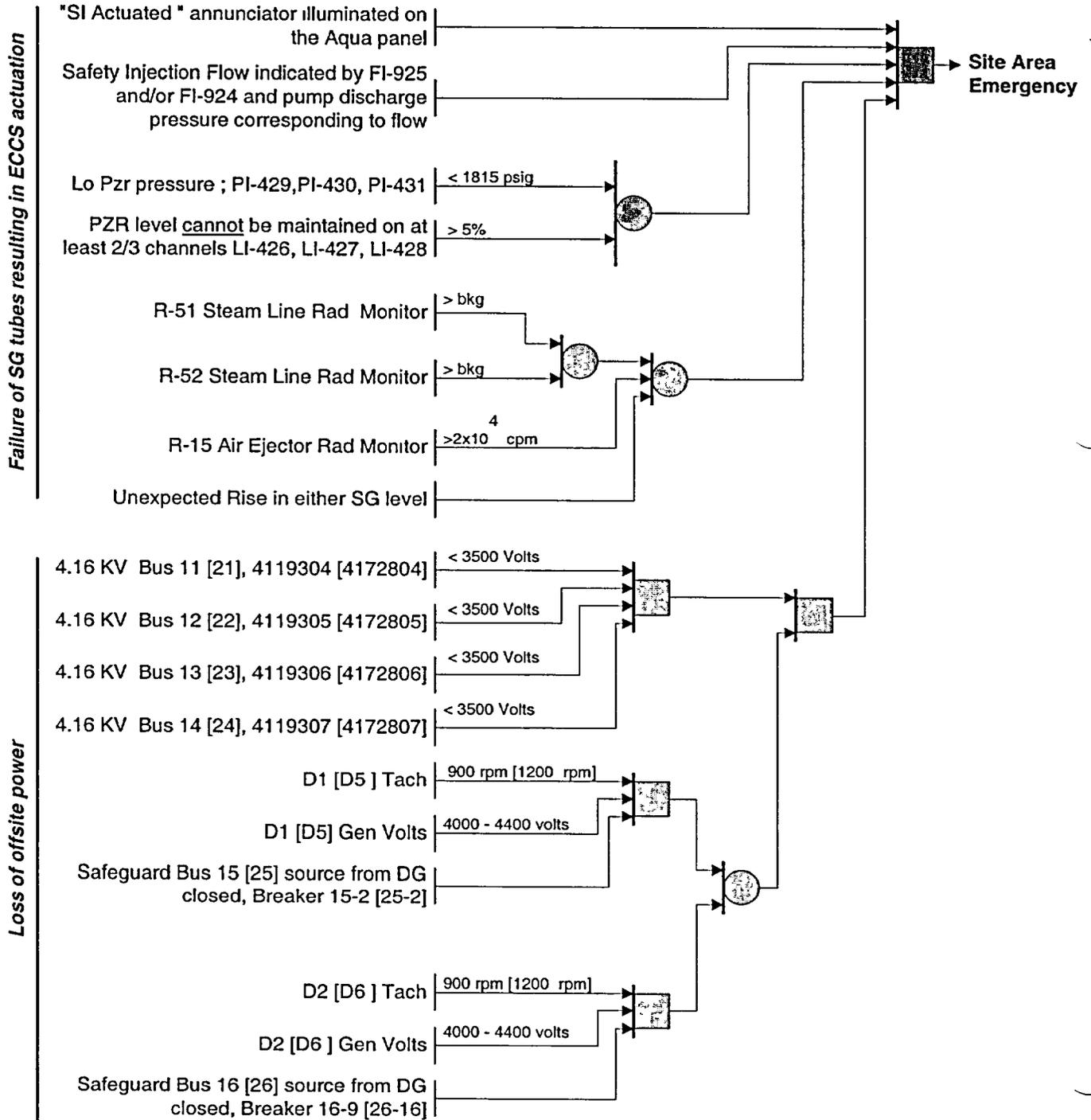


Note: If steam break is outside containment with SG tube rupture and fuel failure, this may be a General Emergency. See Condition # 6, Case 2.

Condition 4 : Abnormal Primary /Secondary Leak

Failure of steam generator tube(s) resulting in ECCS actuation and loss of offsite power

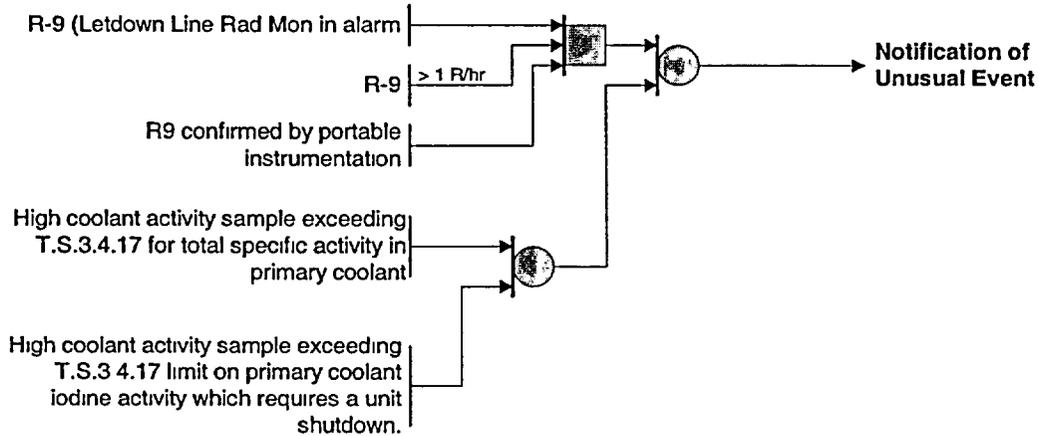
(EAL Ref Manual 4E)



Condition 5 : Core Fuel Damage

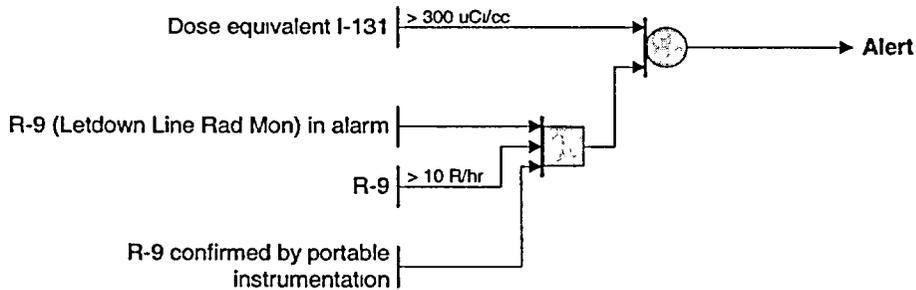
Fuel Damage Indication

(EAL Ref Manual 5A)



Severe Loss of fuel cladding

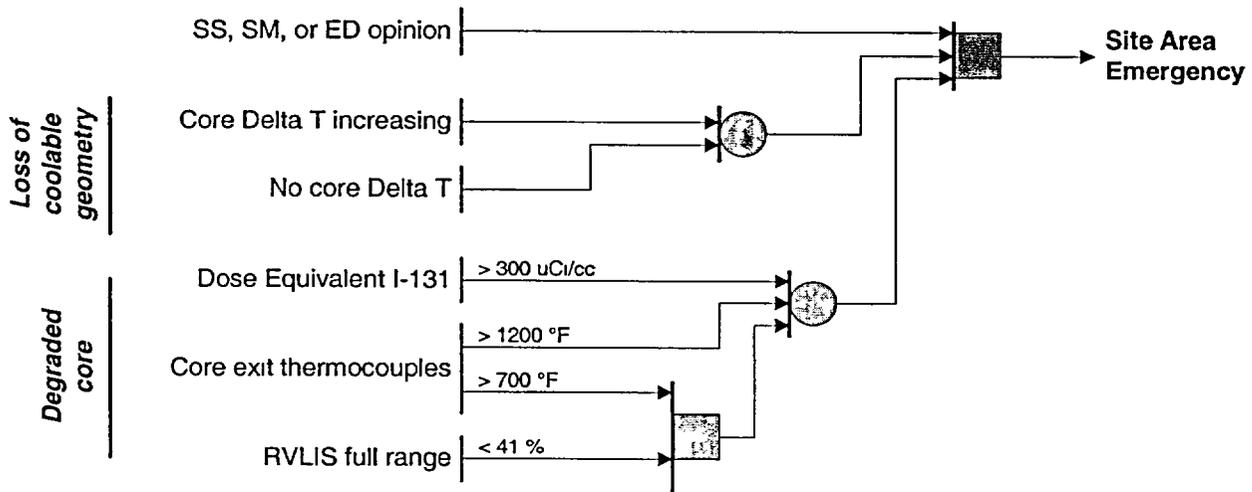
(EAL Ref Manual 5B)



Condition 5 : Core Fuel Damage

Degraded core with possible
loss of coolable geometry

(EAL Ref Manual 5C)



Condition 6 : Loss of 2 of 3 Fission Product Barriers

Loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier. (EAL Ref Manual 6)

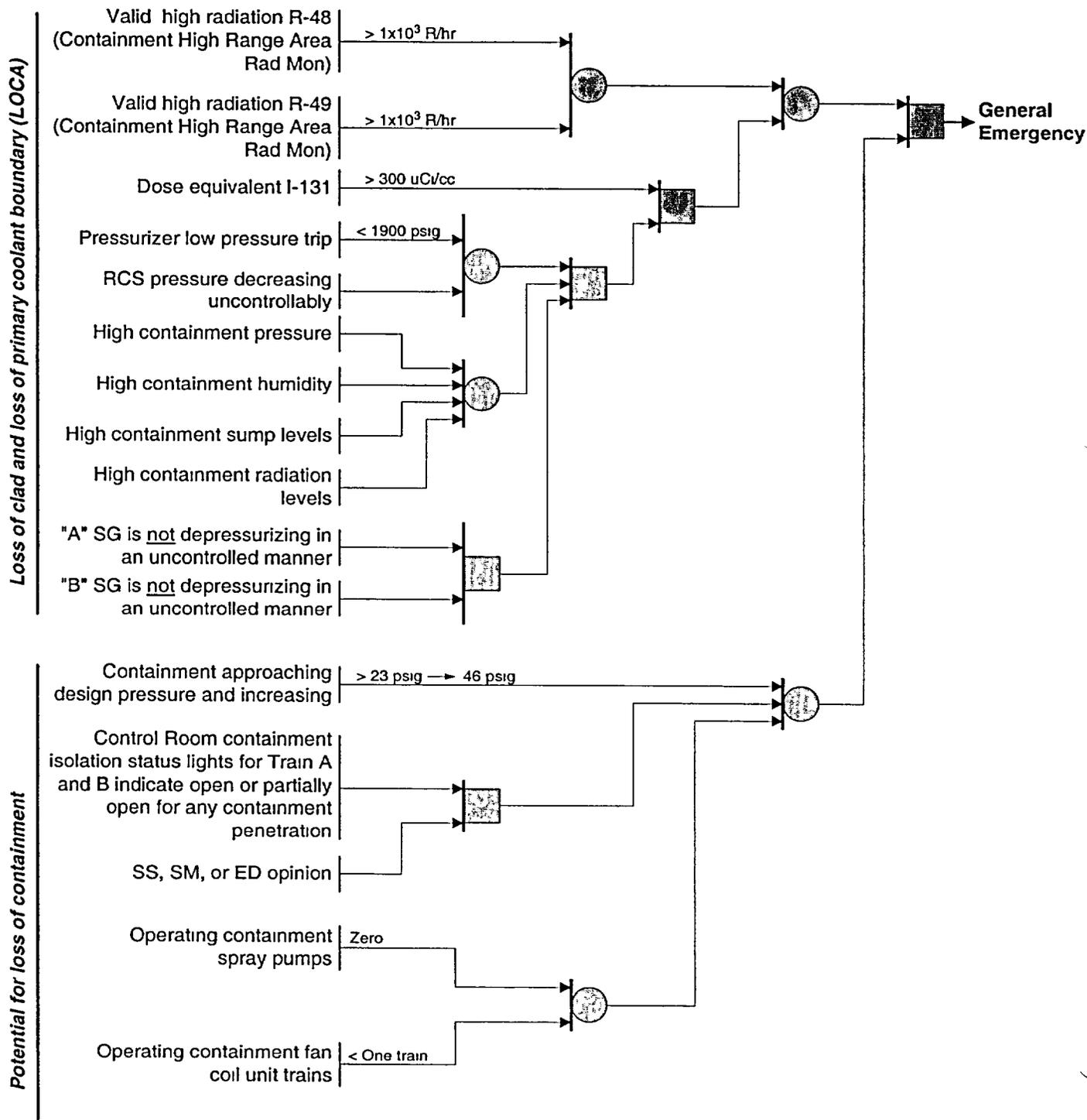
GENERAL EMERGENCY

<p>NOTES:</p>	<ol style="list-style-type: none">1. Three permutations exist for loss of 2 of 3 fission product barriers with a potential loss of 3rd barrier;<ol style="list-style-type: none">A. Failure of cladding and primary coolant boundary with potential loss of containment.B. Failure of cladding and containment with potential loss of primary coolant boundary.C. Failure of containment and primary coolant boundary with potential loss of cladding.<p>These 3 permutations are represented in the following 5 cases, each with its own set of EAL's:</p>2. All cases are applicable to operations in Modes 1, 2, 3, & 4.
----------------------	--

Condition 6: Loss of 2 of 3 Fission Product Barriers

Case 1: Loss of clad, loss of primary coolant boundary (LOCA), and high potential for loss of containment.

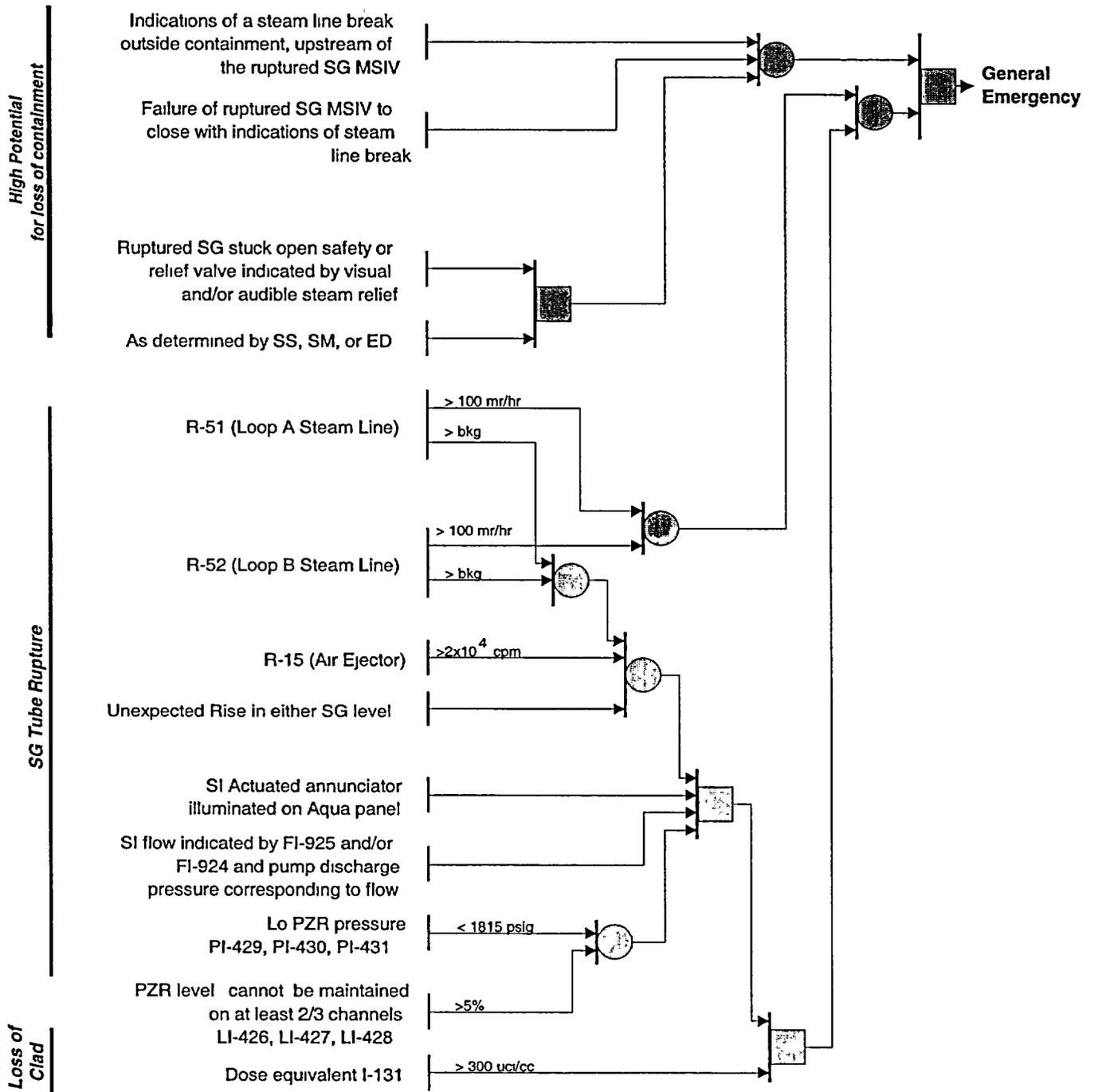
(EAL Ref Manual 6)



Condition 6: Loss of 2 of 3 Fission Product Barriers

Case 2: Loss of clad, SG tube rupture and high potential for loss of containment

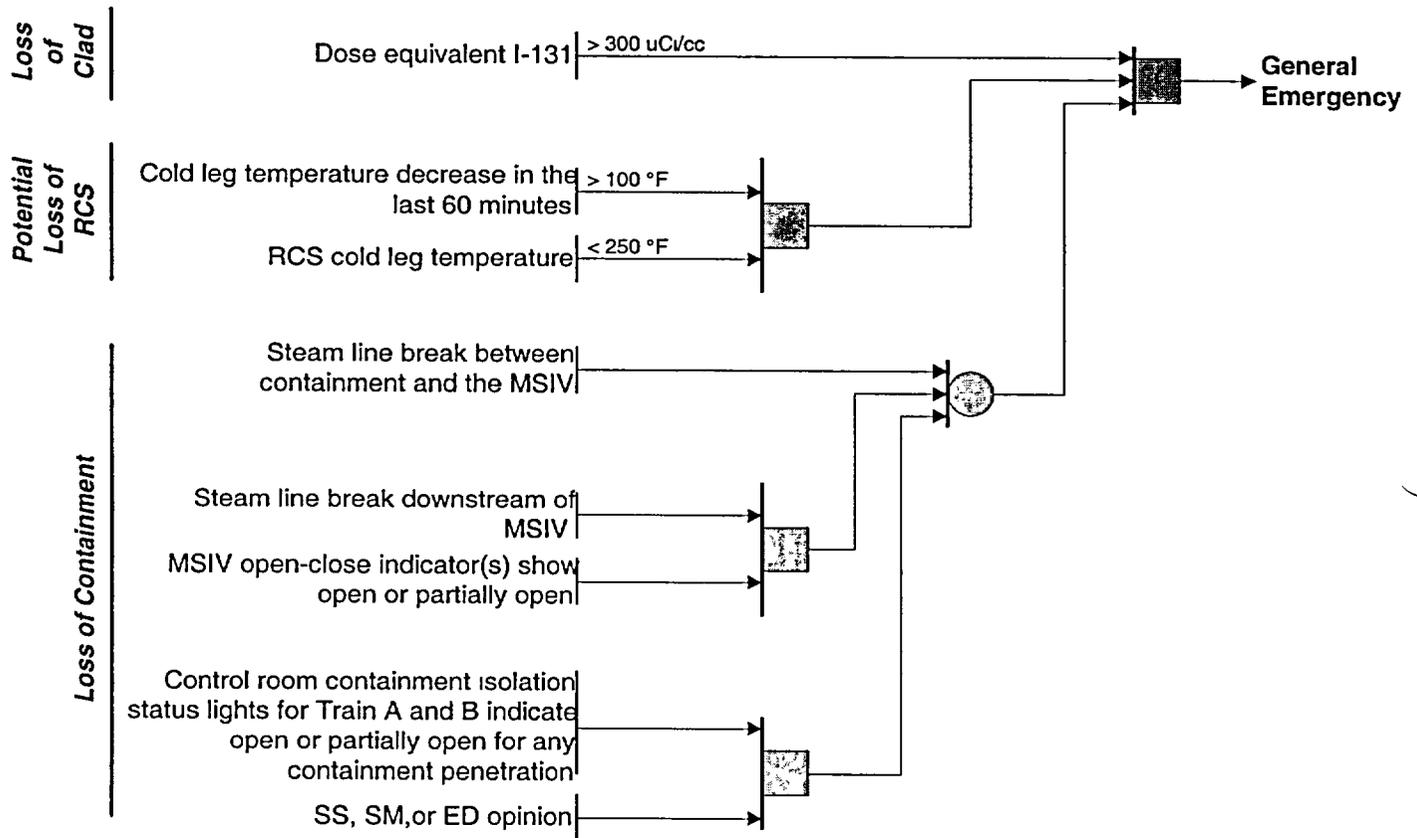
(EAL Ref Manual 6)



Condition 6: Loss of 2 of 3 Fission Product Barriers

Case 3: Loss of clad, containment failure, and a high potential for loss of the RCS boundary.

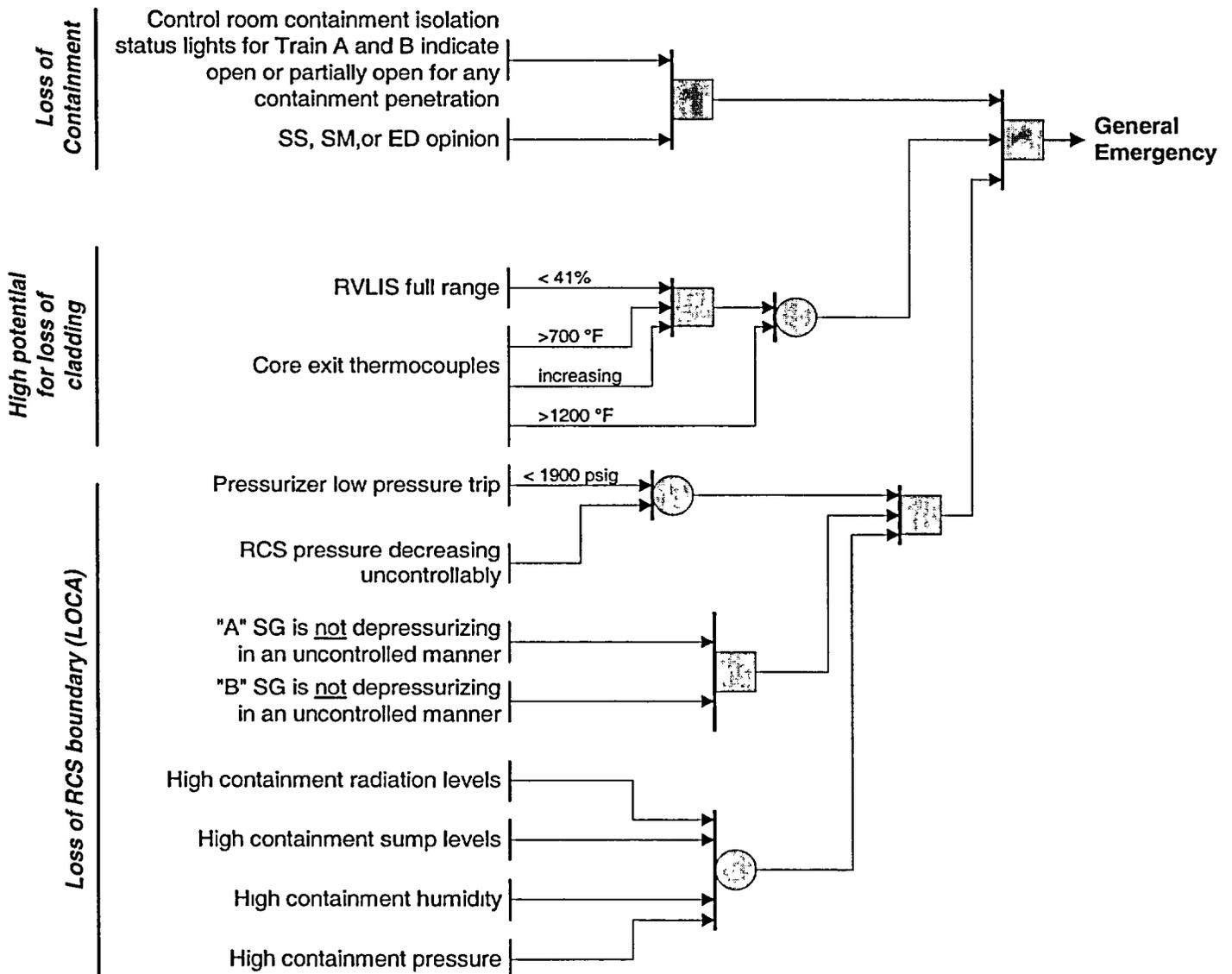
(EAL Ref Manual 6)



Condition 6: Loss of 2 of 3 Fission Product Barriers

Case 4: Loss of RCS boundary (LOCA), loss of containment, and high potential for loss of cladding

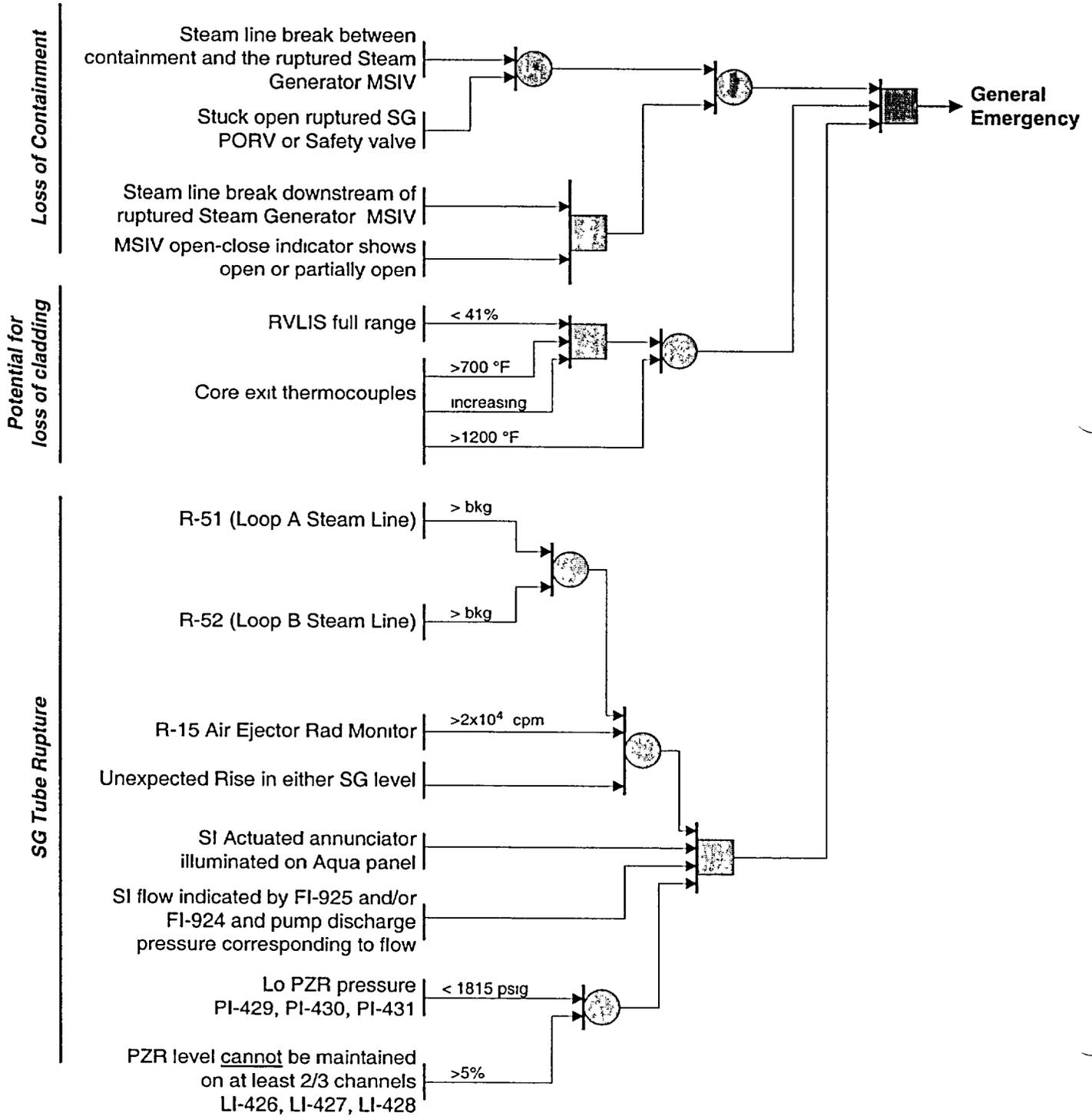
(EAL Ref Manual 6)



Condition 6: Loss of 2 of 3 Fission Product Barriers

**Case 5: Loss of RCS Boundary (SG Tube Rupture)
loss of containment, and high potential for loss of
cladding.**

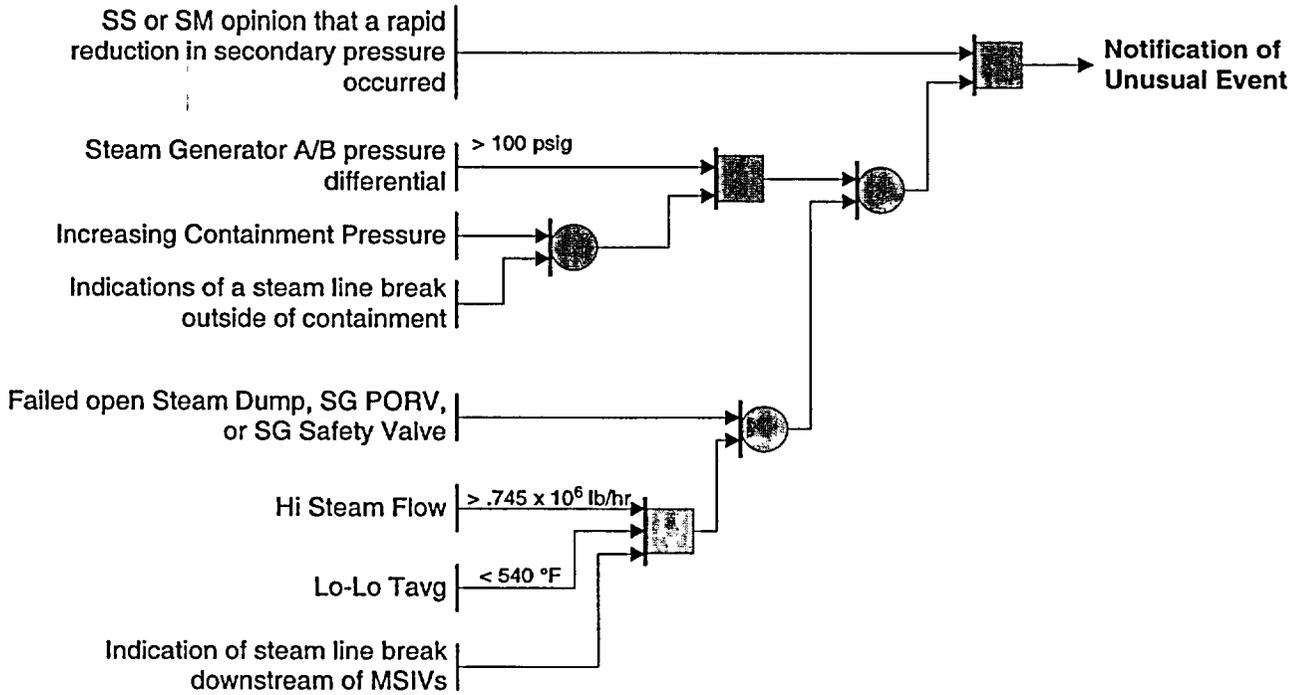
(EAL Ref Manual 6)



Condition 7 : Secondary Coolant Anomaly

Rapid depressurization of secondary side

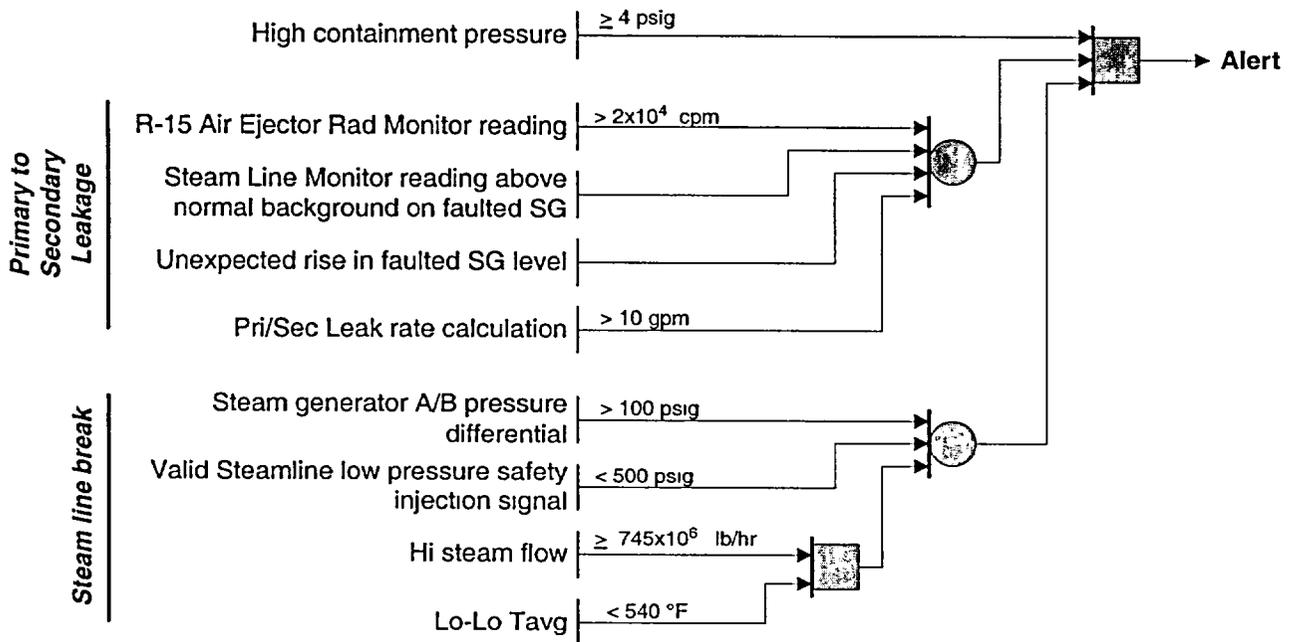
(EAL Ref Manual 7A)



Condition 7 : Secondary Coolant Anomaly

Steam line break inside containment
with significant (greater than 10 gpm)
primary to secondary leak rate.

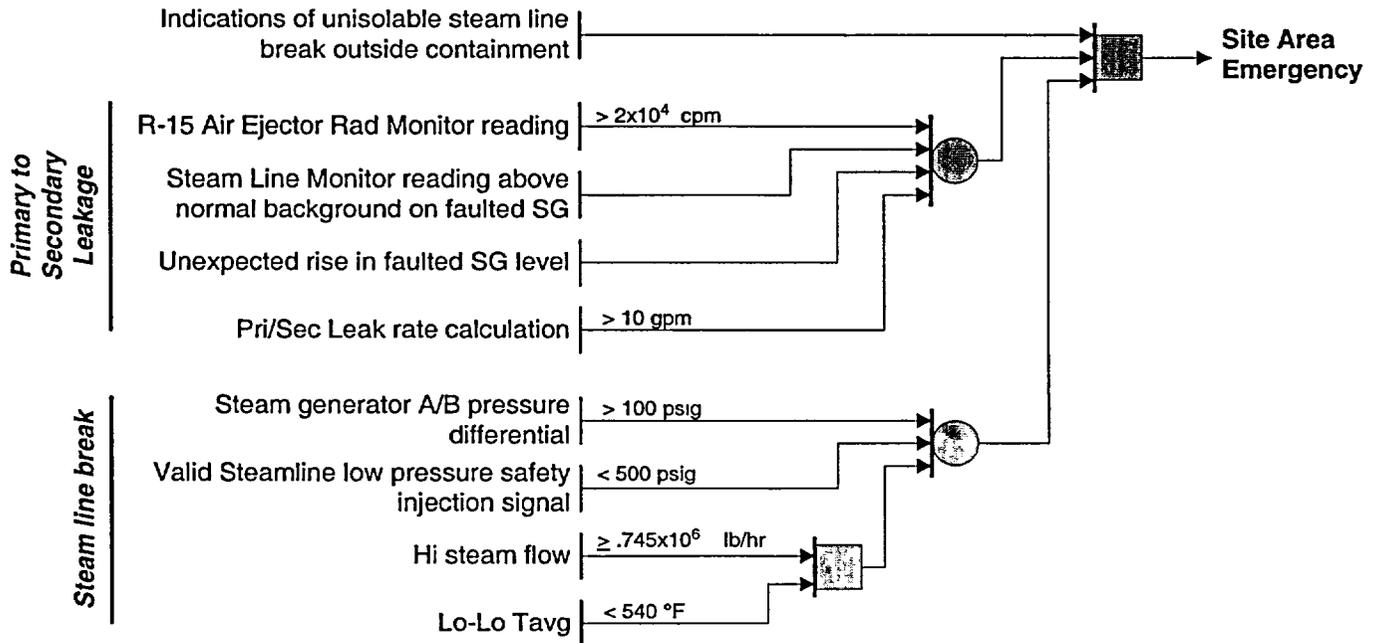
(EAL Ref Manual 7B)



Condition 7 : Secondary Coolant Anomaly

Unisolable steam line break outside containment with significant (greater than 10 gpm) primary to secondary leak rate.

(EAL Ref Manual 7C)

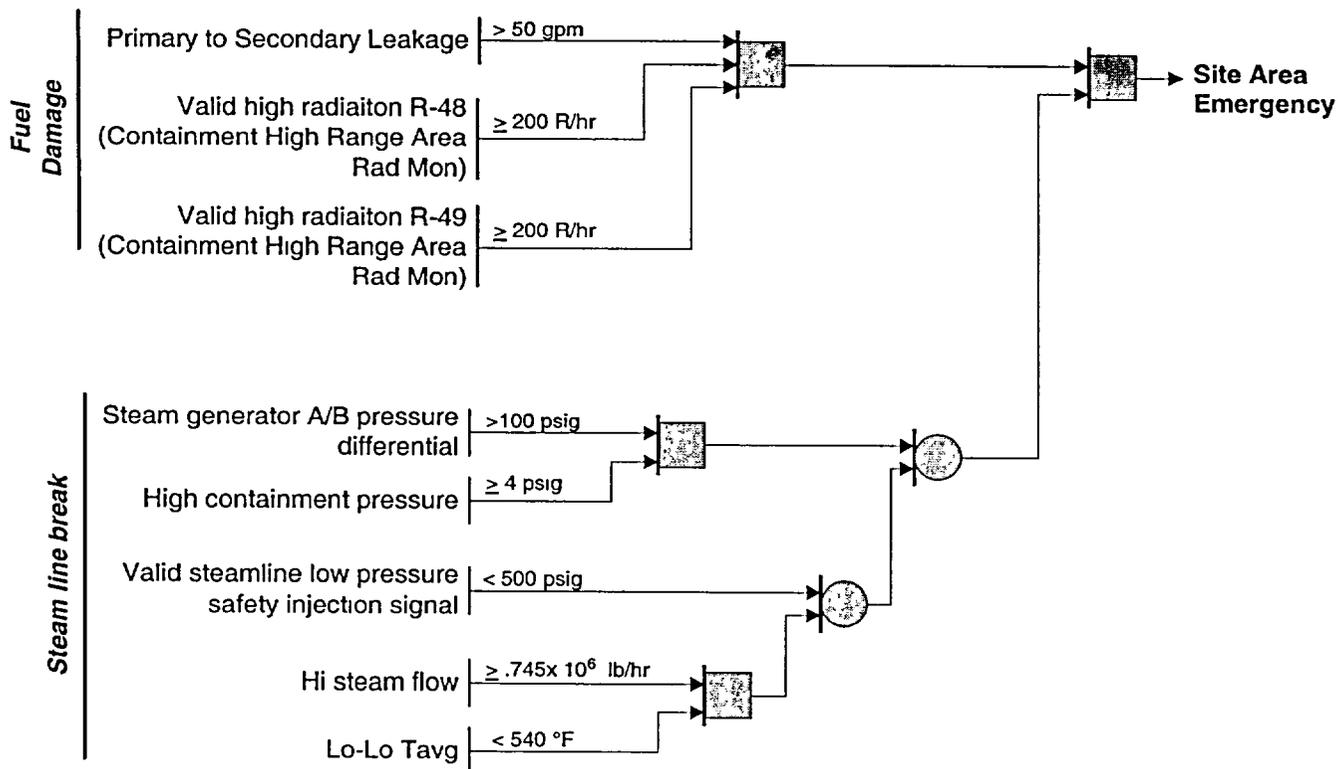


Condition 7 : Secondary Coolant Anomaly

Steam Line break in containment with greater than 50 gpm primary to secondary leakage and indication of fuel damage.

(EAL Ref Manual 7D)

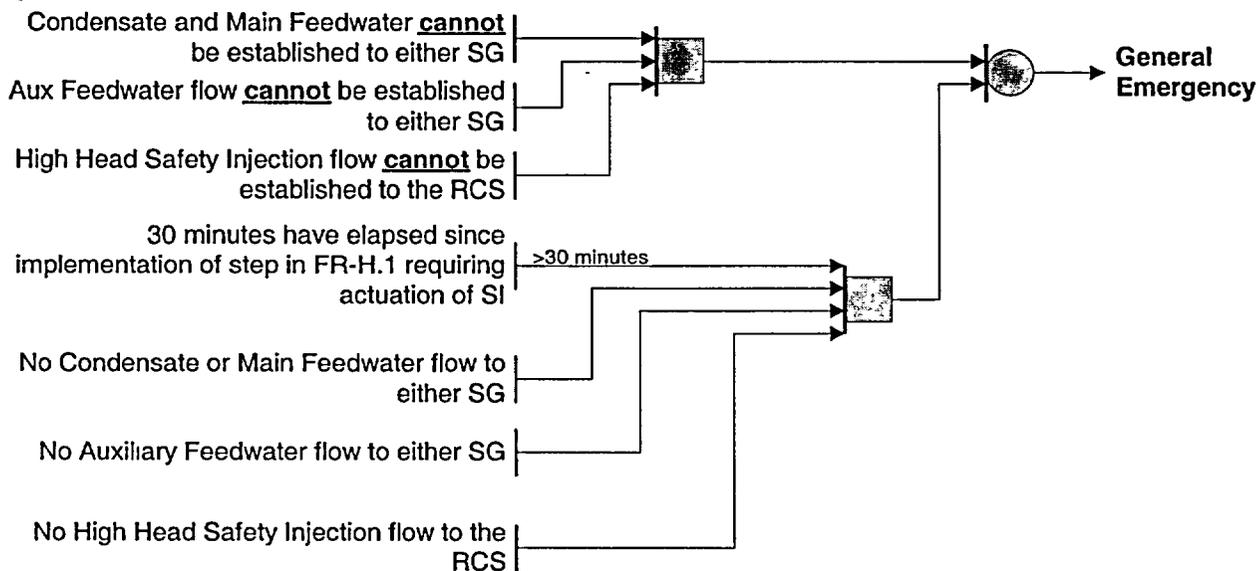
Note: If steam line break is outside containment with SG tube rupture and fuel failure, this may be a General Emergency. See condition # 6, case 2



Condition 7 : Secondary Coolant Anomaly

Transient initiated by loss of feedwater and condensate systems (principal heat removal system) followed by failure of emergency feedwater system for extended period. Core melting possible in several hours. Ultimate failure of containment likely if core melts.

(EAL Ref Manual 7E)

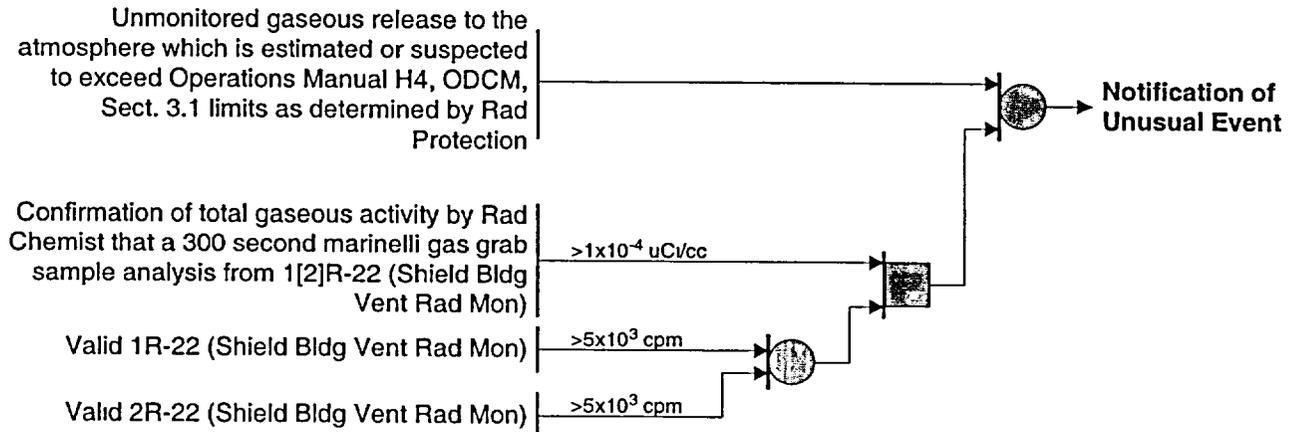


Note: "Cannot be established" means that procedural guidance for establishing condition will not be successful based on knowledge of system/component condition/availability.

Condition 8 : Radiological Effluents

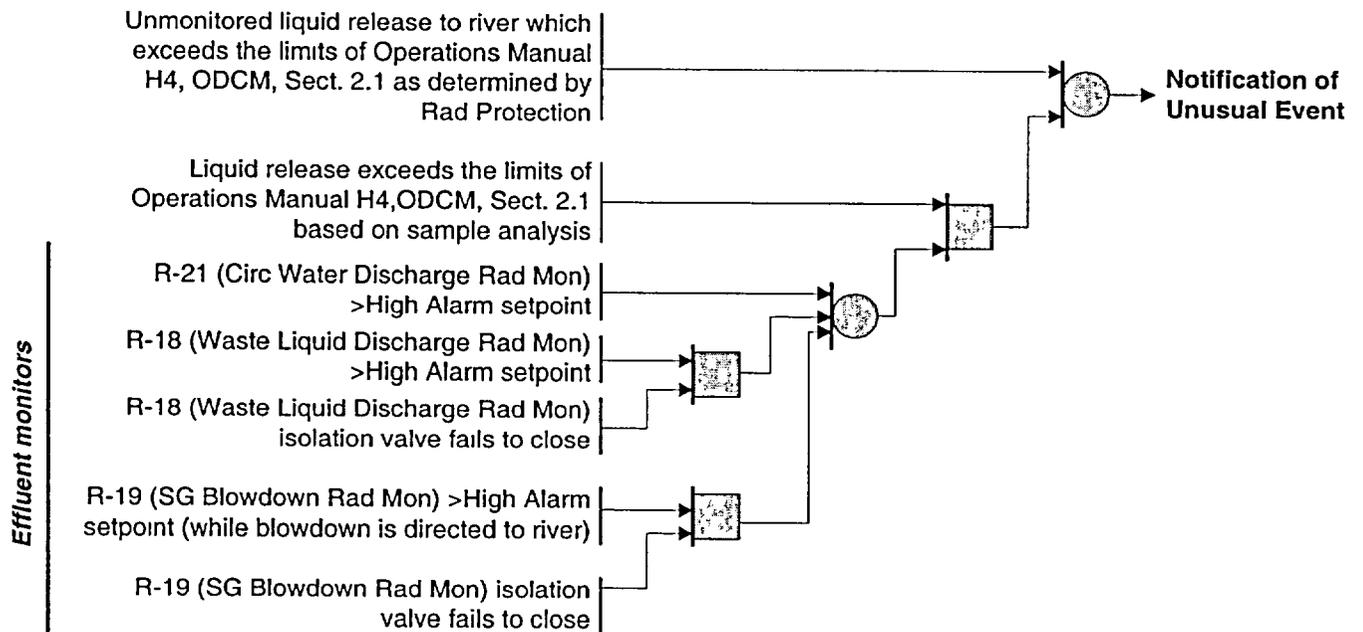
**Airborne Radiological effluent
Technical Specifications exceeded**

(EAL Ref Manual 8A)



**Liquid Radiological effluent-Technical
Specification limits exceeded.**

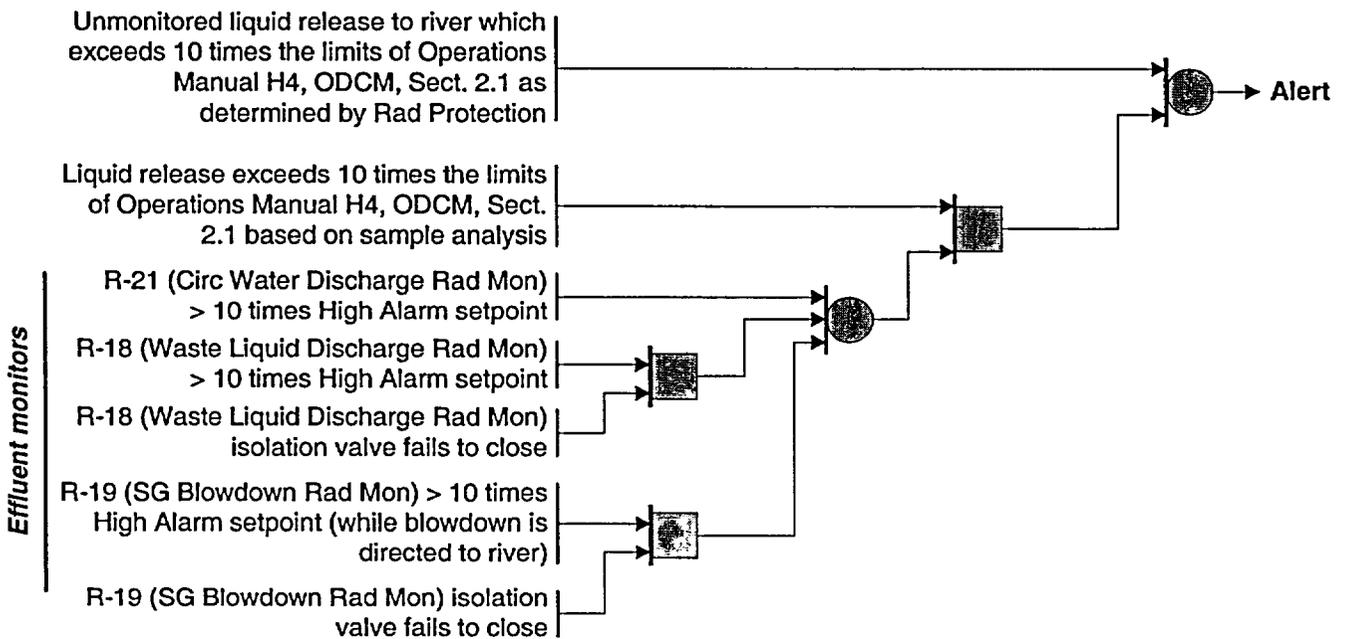
(EAL Ref Manual 8B)



Condition 8 : Radiological Effluents

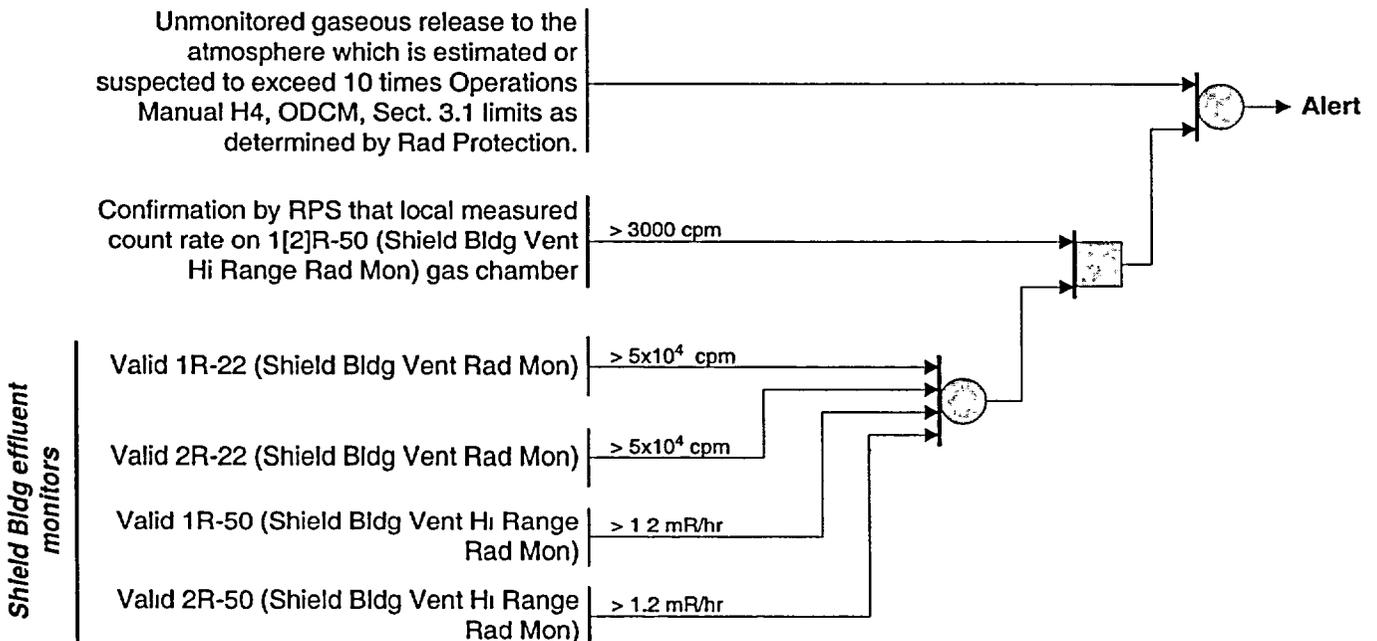
Liquid Radiological effluent greater than ten times Technical Specification limits.

(EAL Ref Manual 8C)



Airborne Radiological effluents greater than ten times Technical Specification instantaneous limits (an instantaneous rate which, if continued for over two hours, would result in about 1 mrem TEDE at the site boundary under average met conditions. TEDE = Total Dose Equivalent).

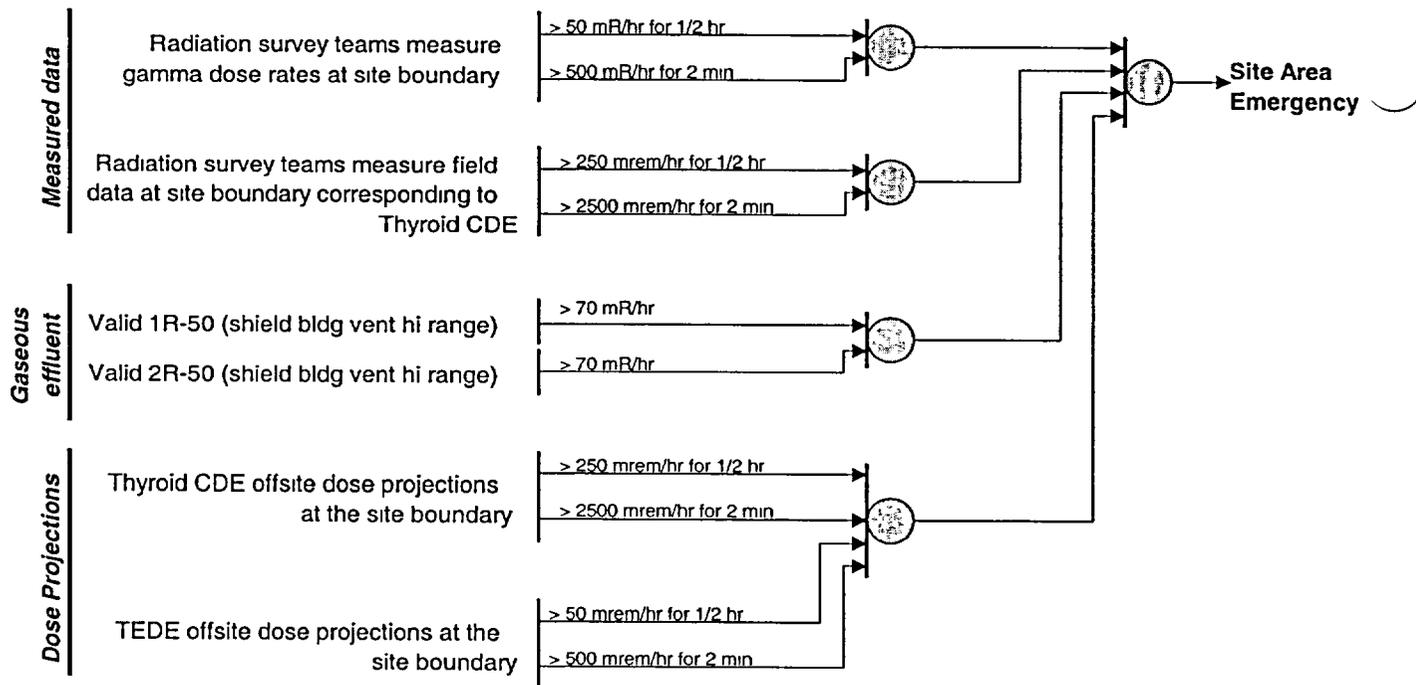
(EAL Ref Manual 8D)



Condition 8 : Radiological Effluents

Airborne Effluent monitors detect levels corresponding to greater than:
1. 50 mrem/hr TEDE for one-half hour; or
2. 250 mrem/hr Thyroid CDE for one-half hour; or
3. 500 mrem/hr TEDE for two minutes; or
4. 2500 mrem/hr Thyroid CDE for two minutes
at the site boundary for adverse meteorology.
TEDE = Total Effective Dose Equivalent.
CDE = Committed Dose Equivalent.

(EAL Ref Manual 8E)



Condition 8 : Radiological Effluents

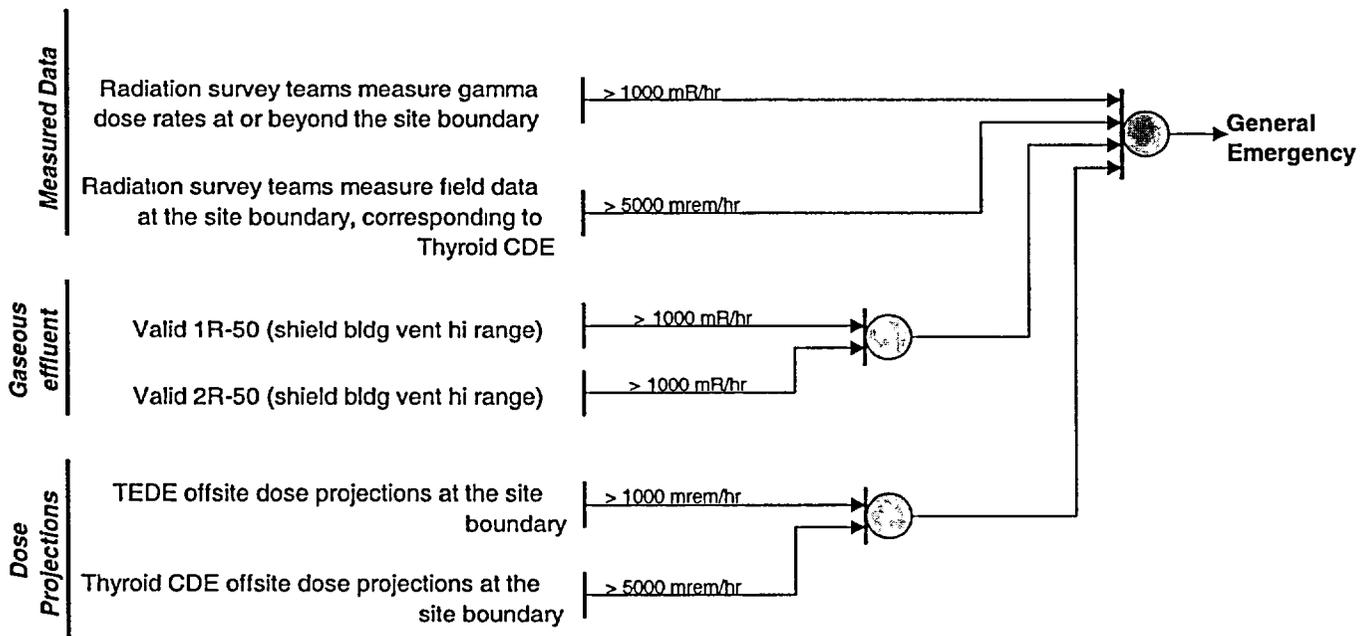
Effluent monitors detect levels corresponding to:

1. 1 rem/hr TEDE, or
2. 5 rem/hr Thyroid CDE

at the site boundary under actual meteorological conditions.

TEDE = Total Effective Dose Equivalent.
CDE = Committed Dose Equivalent.

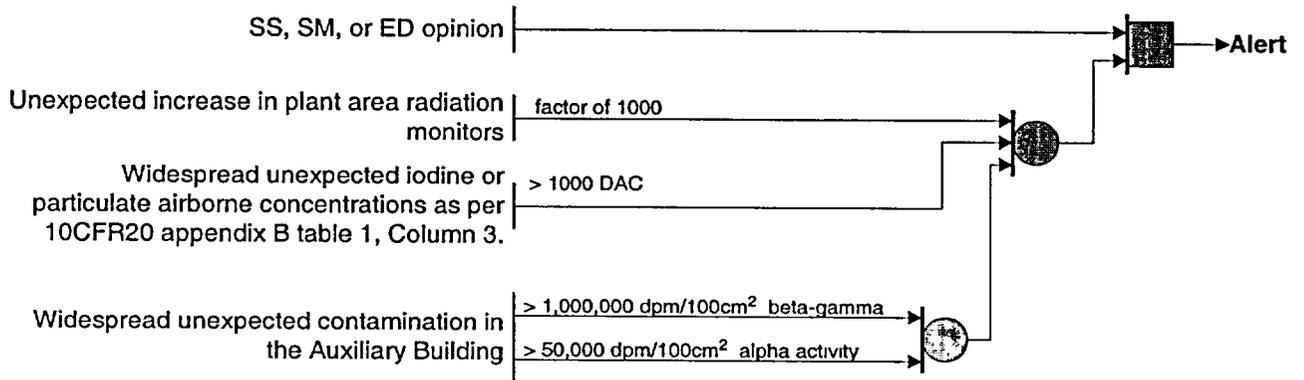
(EAL Ref Manual 8F)



Condition 8 : Radiological Effluents

Radiation levels or airborne contamination which indicate a severe degradation in the control of radioactive materials (e.g. increase of factor of 1000 in direct radiation readings within facility)

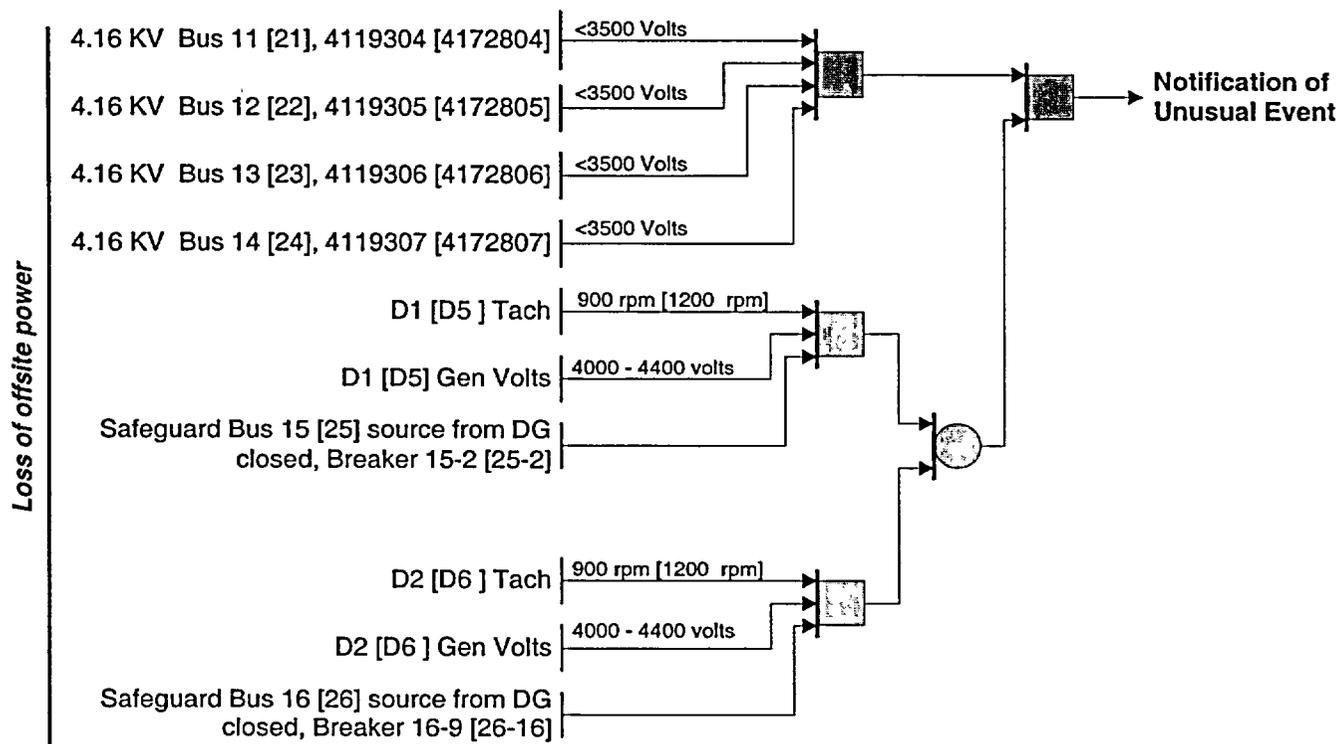
(EAL Ref Manual 8G)



Condition 9 : Major Electrical Failures

Loss of Offsite Power

(EAL Ref Manual 9A)



Loss of onsite AC power capability

(EAL Ref Manual 9B)

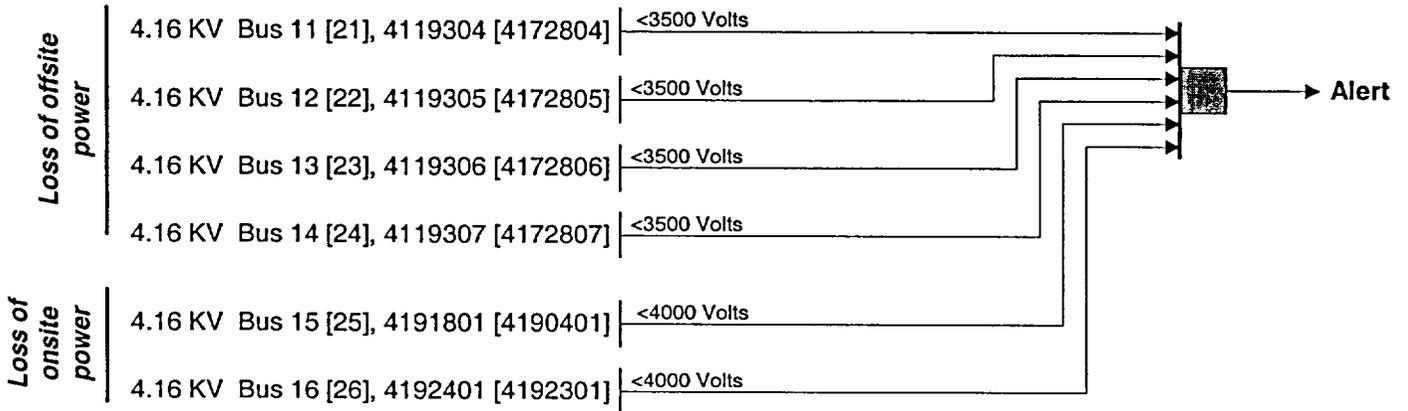
Loss of D1 & D2 [D5 & D6] diesel generators when they are required to be operable by Tech Specs

Notification of Unusual Event

Condition 9 : Major Electrical Failures

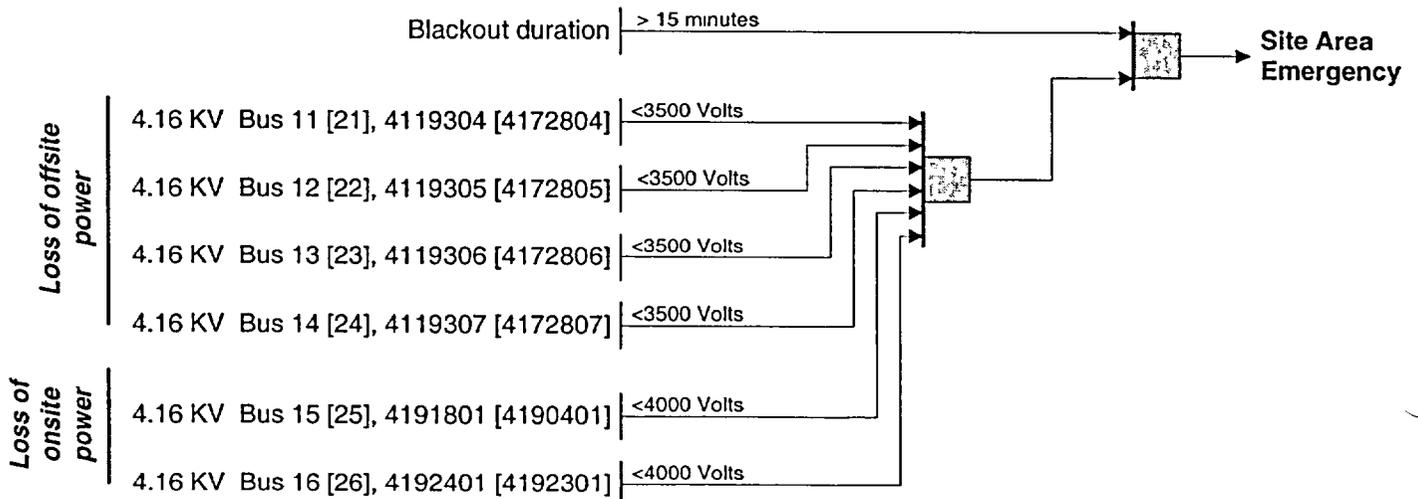
Loss of offsite power and loss of all onsite AC power (See Site Area Emergency for extended loss).

(EAL Ref Manual 9C)



Loss of offsite power and loss of onsite AC power for more than 15 minutes.

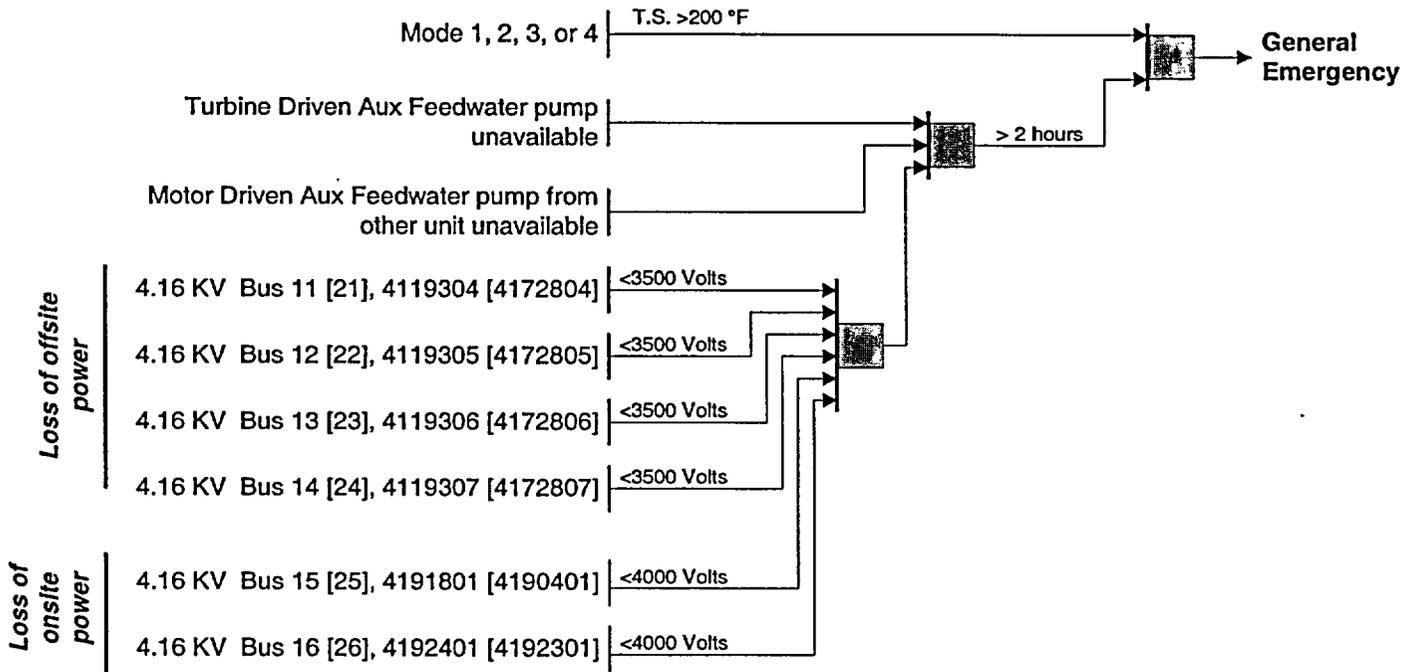
(EAL Ref Manual 9D)



Condition 9 : Major Electrical Failures

Failure of offsite and onsite power along with total loss of emergency feedwater makeup capability for greater than 2 hours. This would lead to eventual core melt and likely failure of containment.

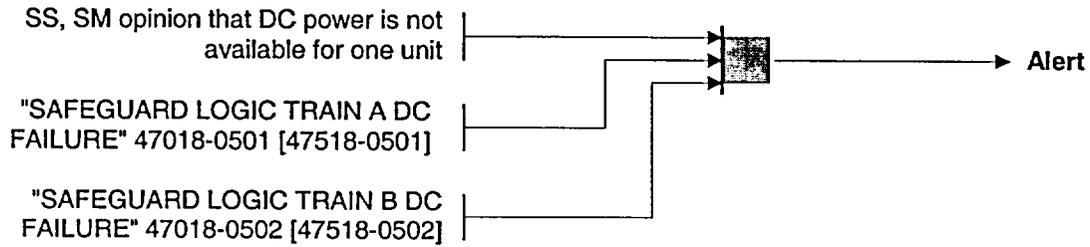
(EAL Ref Manual 9E)



Condition 9 : Major Electrical Failures

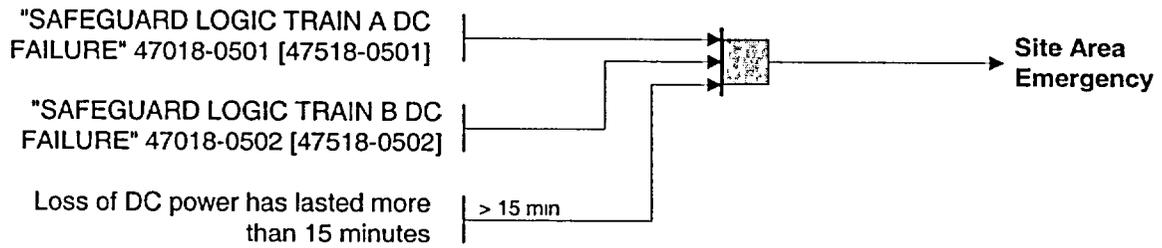
Loss of all onsite DC power (see Site Area Emergency for extended loss)

(EAL Ref Manual 9F)



Loss of all vital onsite DC power for more than 15 minutes

(EAL Ref Manual 9G)



Condition 10 : Control Room Evacuations

Evacuation of the Control Room anticipated or required with control of shutdown systems established from Hot Shutdown Panels and local stations.

(EAL Ref Manual 10A)

SS, SM, or ED determines evacuation of Control Room is anticipated or required with control of shutdown systems established from Hot Shutdown Panels and local stations

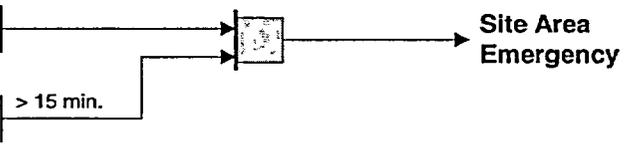
Alert

Note: If reason for evacuation is fire in Control Room or Relay Room, see initiating condition 11C, "Fire compromising the functions of safety systems" for possible reclassification.

Evacuation of the Control Room and control of shutdown systems not established from Hot Shutdown Panels and local stations within 15 minutes.

(EAL Ref Manual 10B)

Evacuation of Control Room conducted
Control of shutdown systems not established from Hot Shutdown Panels and local stations within 15 minutes

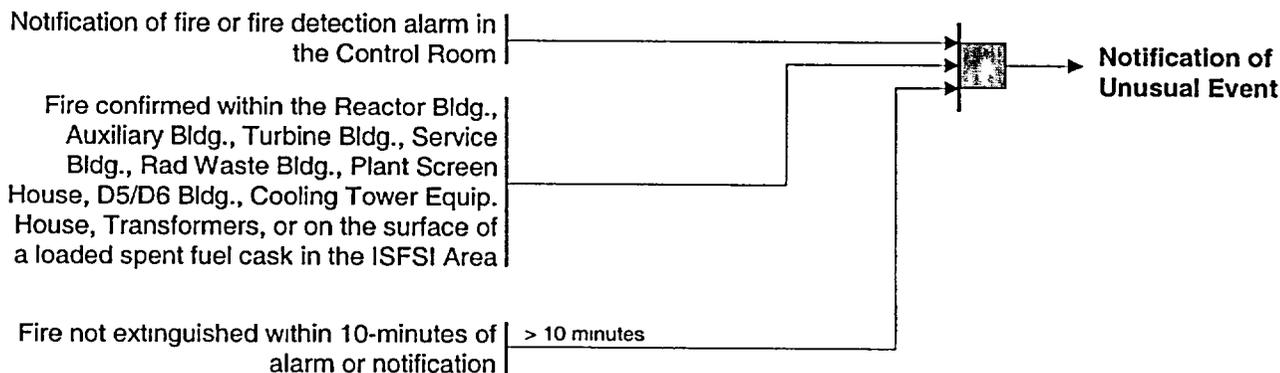


Condition 11 : Fires

Fire within the plant or ISFSI lasting more than 10 minutes.

(EAL Ref Manual 11A)

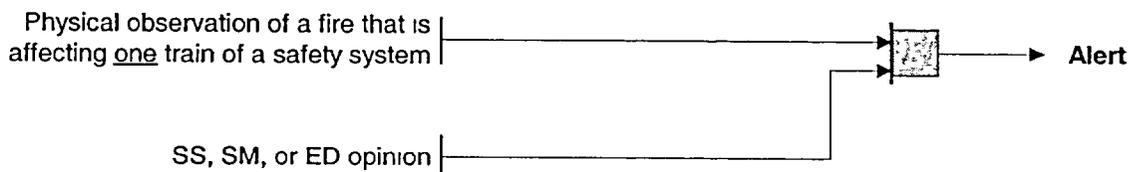
Note: FIRE: is combustion characterized by heat and light (flame). Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.



Fire potentially affecting safety systems.

(EAL Ref Manual 11B)

Note: FIRE: is combustion characterized by heat and light (flame). Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.

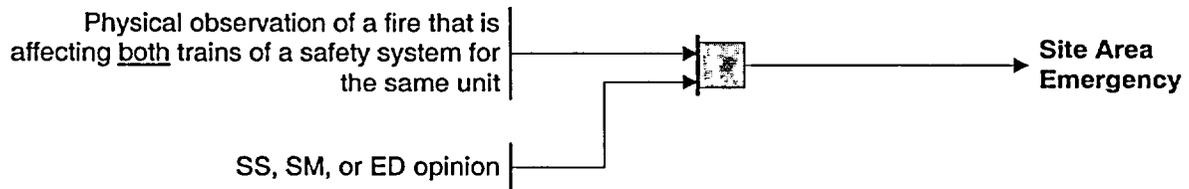


Condition 11 : Fires

Fire compromising the functions of safety systems.

(EAL Ref Manual 11C)

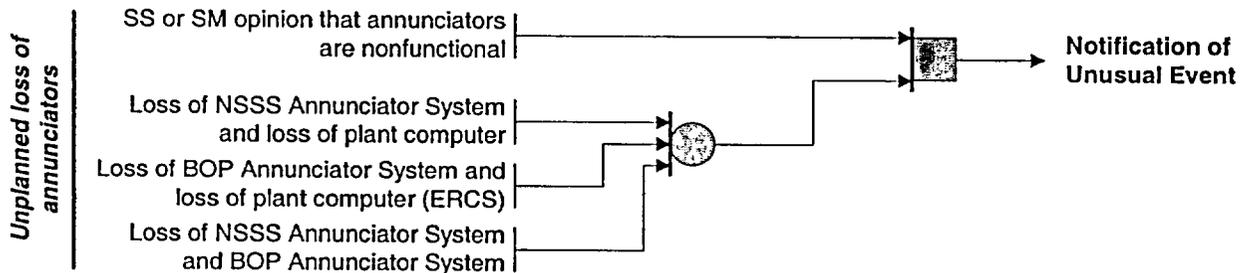
Note: FIRE: is combustion characterized by heat and light (flame). Sources of smoke such as slipping drive belts or overheated electrical equipment do not constitute fires. Observation of flame is preferred but is NOT required if large quantities of smoke and heat are observed.



Condition 12 : Plant Shutdown Functions

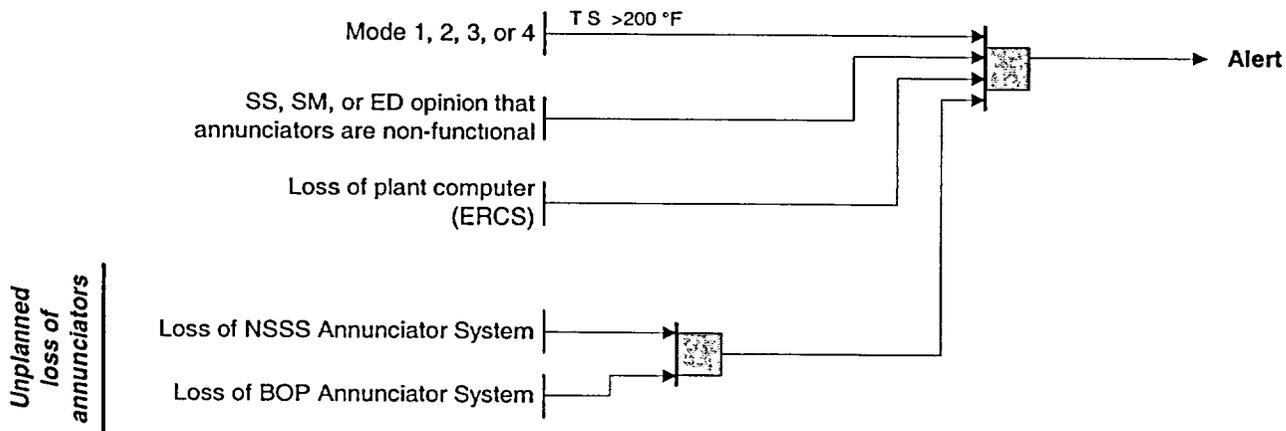
Nonfunctional alarms in the Control Room

(EAL Ref Manual 12B)



Most or all alarms (annunciators) lost.

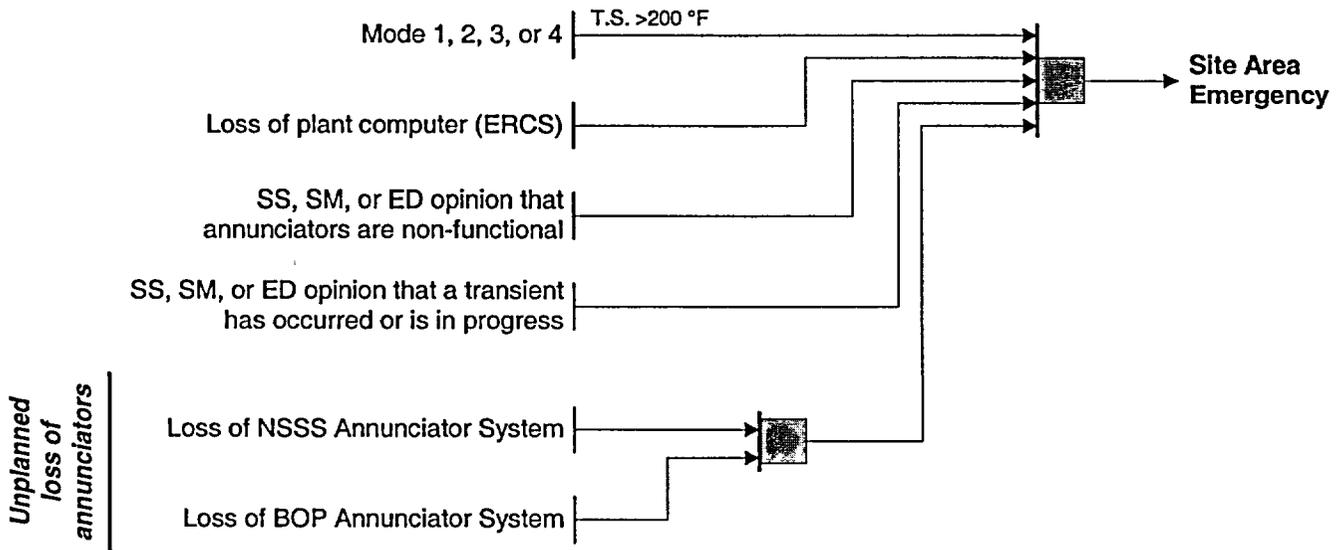
(EAL Ref Manual 12C)



Condition 12 : Plant Shutdown Functions

Most of all alarms (annunciators) lost
 and plant transient initiated or in
 progress.

(EAL Ref Manual 12D)

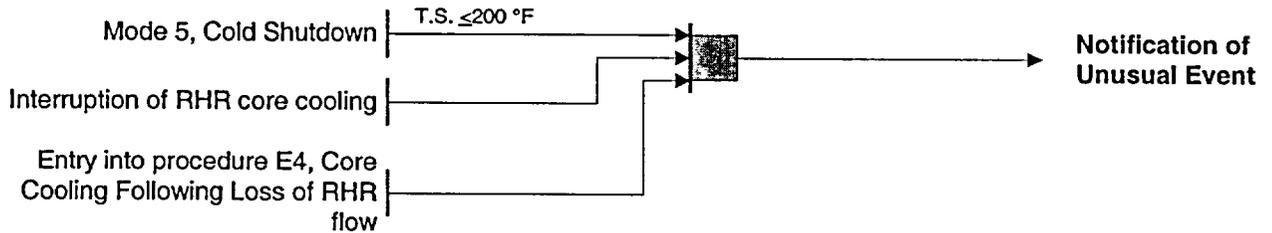


Note: A transient is an UNPLANNED event involving one of more of the following: (1) automatic turbine runback >25% thermal reactor power, (2) electrical load rejection >25% full electrical load, (3) Reactor Trip, (4) Safety Injection actuation, or (5) thermal power increase or oscillations >10%.

Condition 12 : Plant Shutdown Functions

Momentary loss of core cooling needed for plant Mode 5, Cold Shutdown.

(EAL Ref Manual 12E)



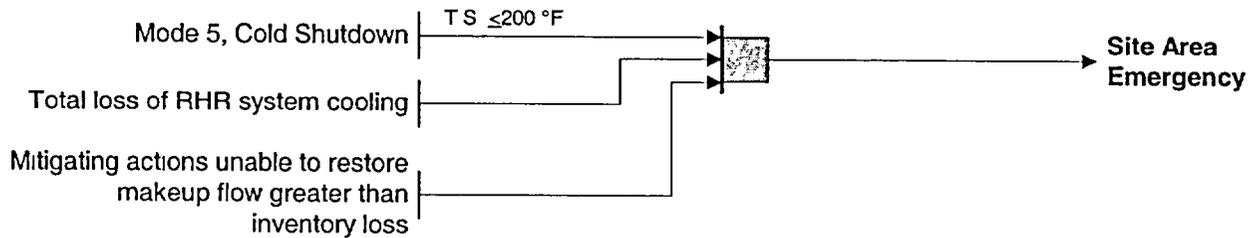
Inability to maintain plant in Mode 5, Cold Shutdown.

(EAL Ref Manual 12F)



Loss of water level that has uncovered or will uncover the fuel in the reactor vessel while at Mode 5, Cold Shutdown.

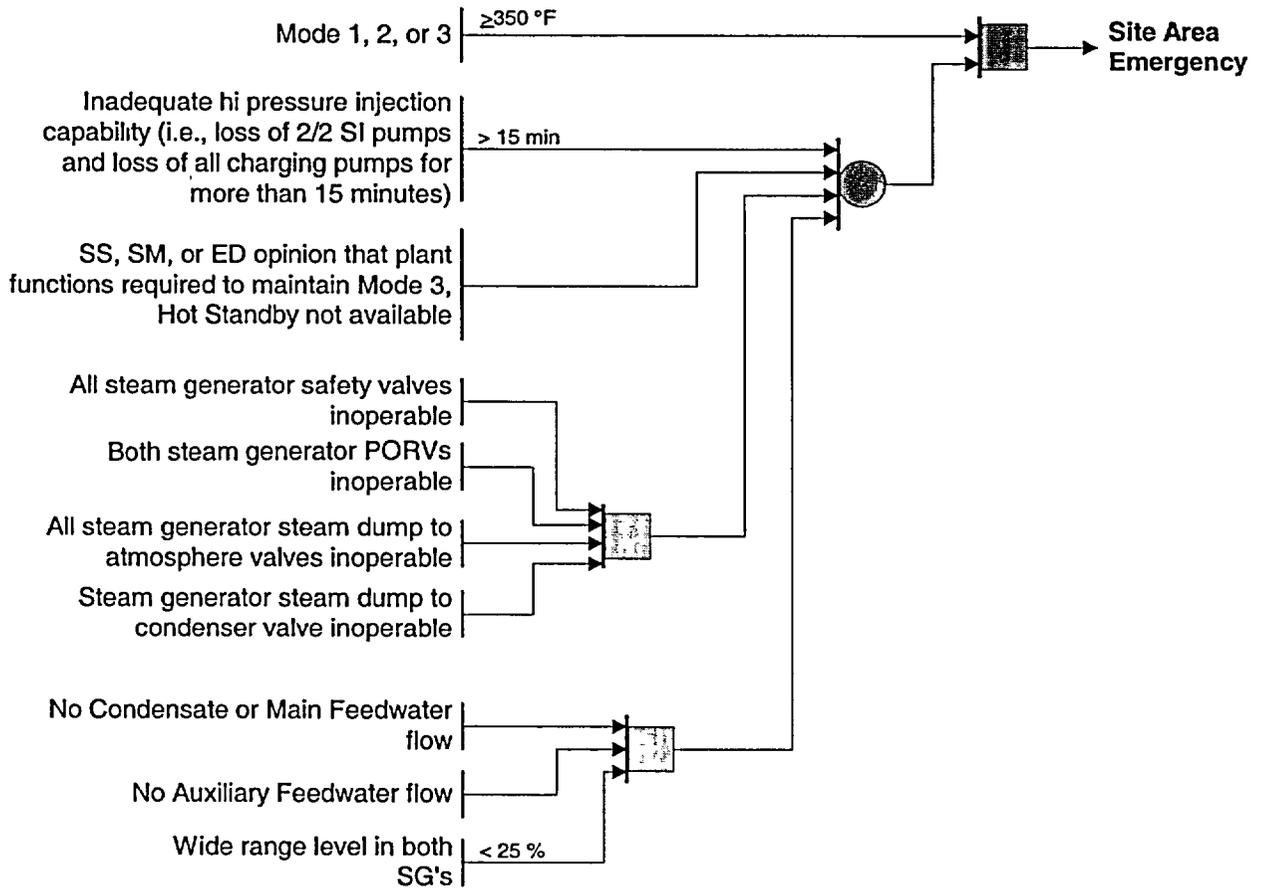
(EAL Ref Manual 12G)



Condition 12 : Plant Shutdown Functions

Complete loss of any function needed for
 plant Mode 3, Hot Standby.
 (Also see Condition #7 for possible
 General if feed and bleed is initiated)

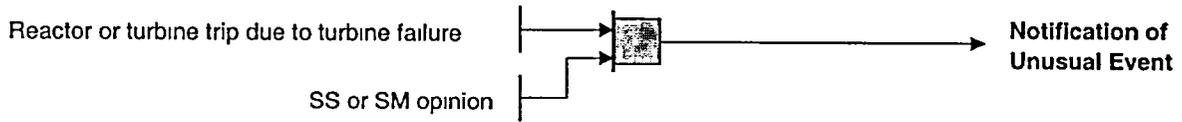
(EAL Ref Manual 12H)



Condition 12 : Plant Shutdown Functions

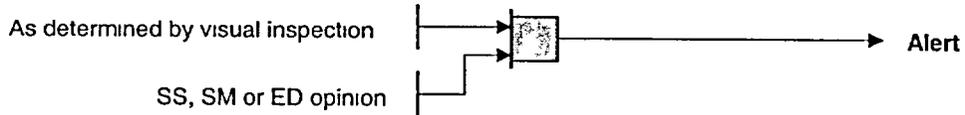
Turbine failure requiring a reactor /
turbine trip.

(EAL Ref Manual 12I)



Turbine failure causing casing
penetration.

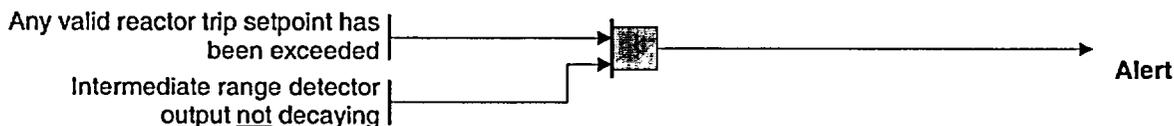
(EAL Ref Manual 12J)



Condition 12 : Plant Shutdown Functions

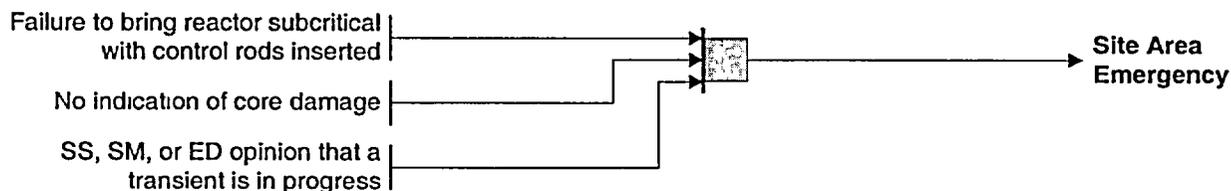
Failure of the reactor protection system to initiate and complete a trip which brings the reactor subcritical.

(EAL Ref Manual 12K)



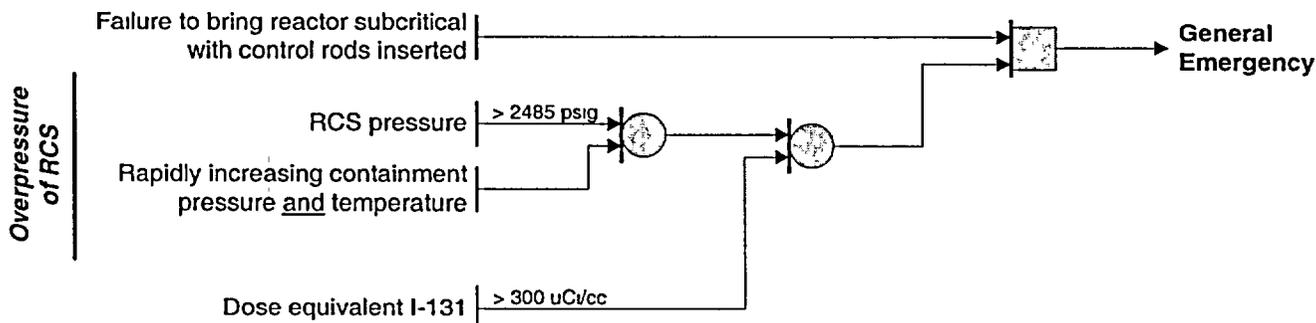
Transient requiring operation of shutdown systems with failure to trip (continued power generation but no core damage immediately evident).

(EAL Ref Manual 12L)



Transient requiring operation of shutdown systems with failure to trip which results in core damage or additional failure of core cooling and makeup systems (which could lead to core melt).

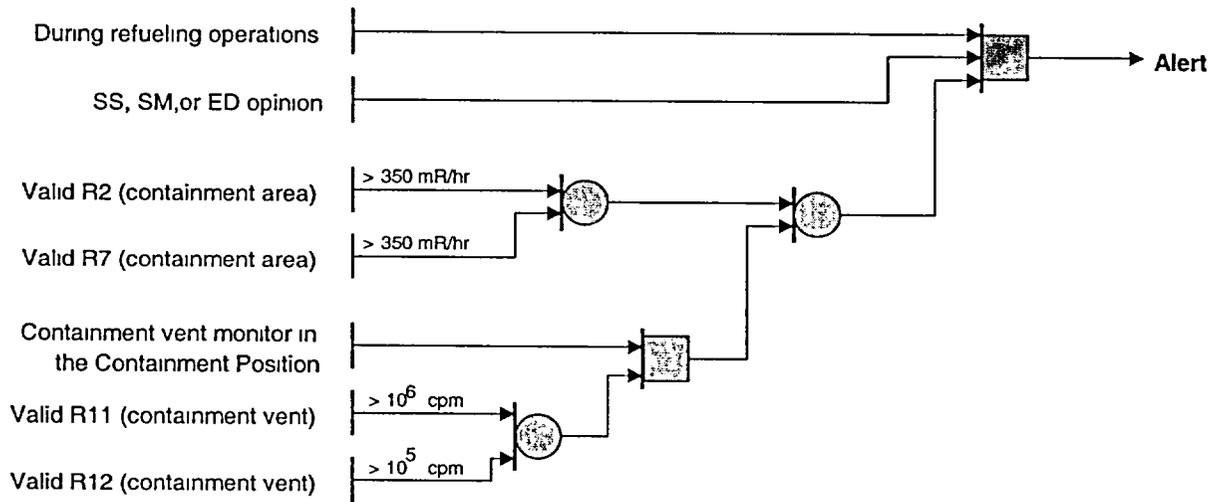
(EAL Ref Manual 12M)



Condition 13 : Fuel Handling Accidents

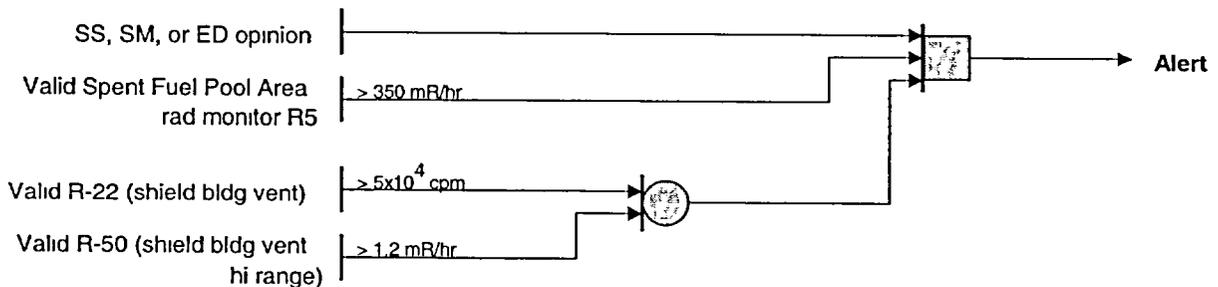
Fuel damage accident with release of radioactivity to containment.

(EAL Ref Manual 13A)



Fuel damage accident with release of radioactivity to the fuel handling building.

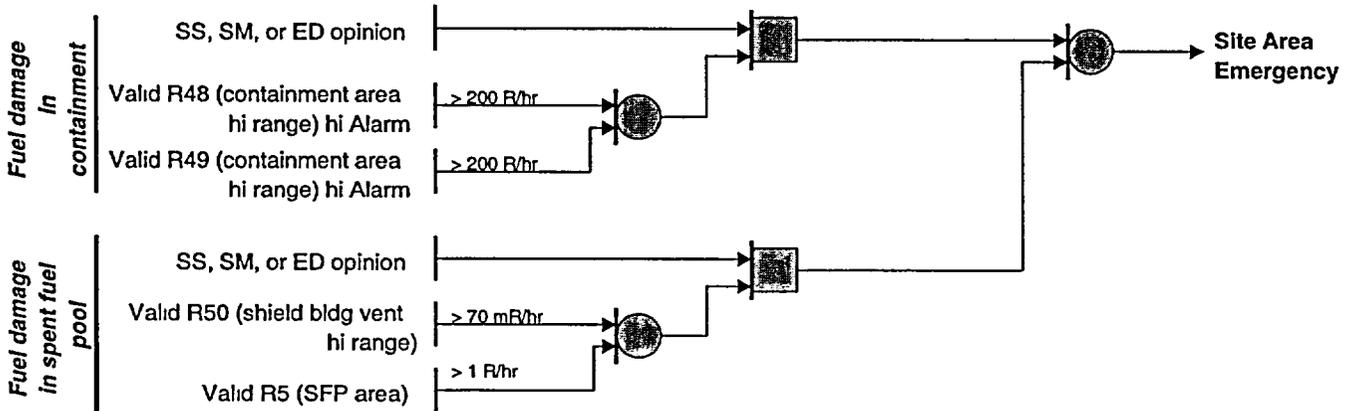
(EAL Ref Manual 13B)



Condition 13 : Fuel Handling Accidents

Major damage to spent fuel in containment or fuel handling building (e.g., large object damages fuel or water loss below fuel level).

(EAL Ref Manual 13C)



Condition 14 : Coolant Pump

DELETED

Deleted based on NRC Branch Position On Acceptable Deviation From Appendix 1 to NUREG-0654/FEMA-REP-1, July 11, 1994.

Condition 15 : Contaminated Injured Person

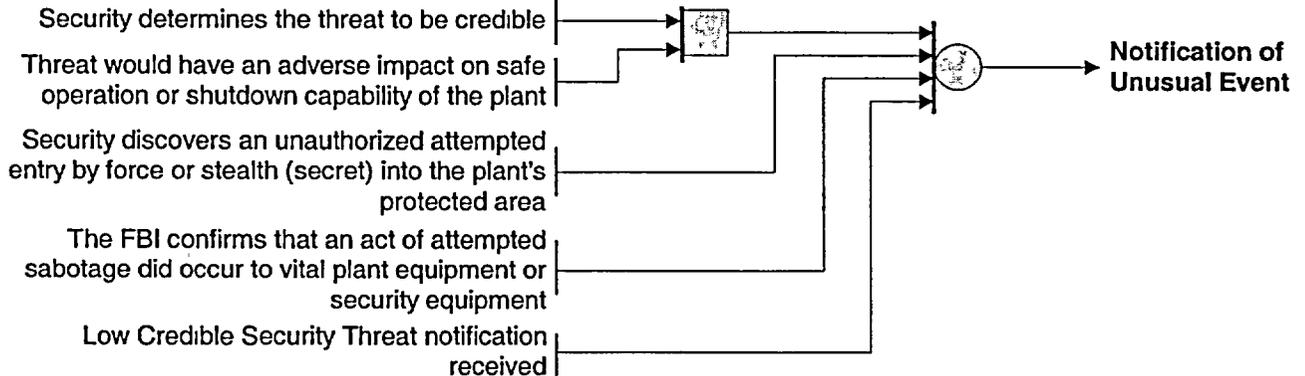
DELETED

Deleted based on NRC Branch Position On Acceptable Deviation From Appendix 1 to NUREG-0654/FEMA-REP-1, July 11, 1994.

Condition 16 : Security

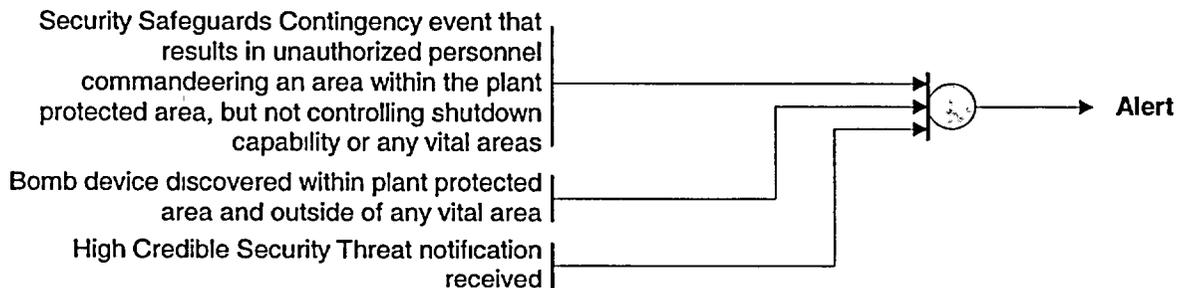
Credible site-specific security threat notification or attempted entry or attempted sabotage:

(EAL Ref Manual 16A)



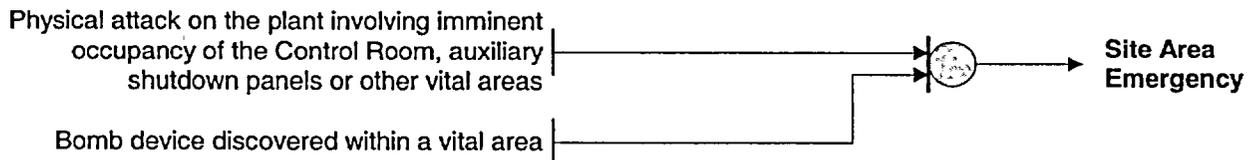
Ongoing security compromise:

(EAL Ref Manual 16B)



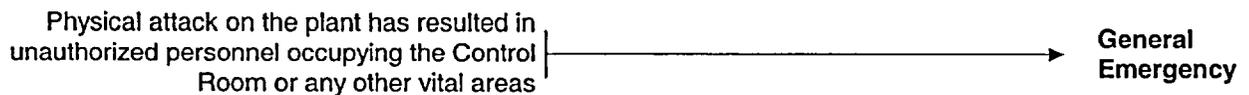
Imminent loss of physical control of the plant:

(EAL Ref Manual 16C)



Loss of physical control of the plant:

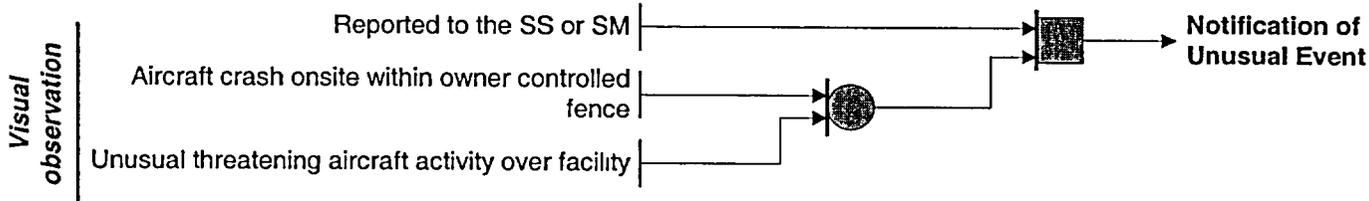
(EAL Ref Manual 16D)



Condition 17 : Hazards to Plant Operations

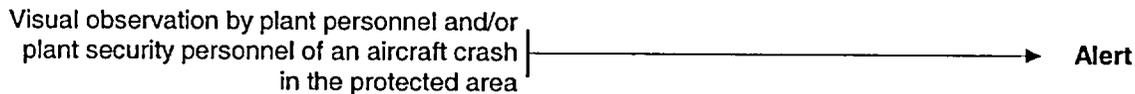
Aircraft crash onsite or unusual aircraft activity over facility.

(EAL Ref Manual 17A)



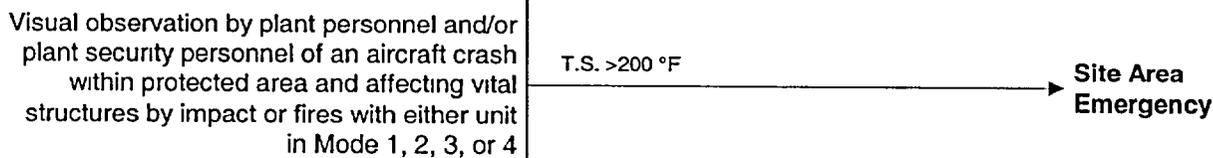
Aircraft crash in the protected area.

(EAL Ref Manual 17B)



Aircraft crash within protected area and affecting vital structures by impact or fires with plant not in Mode 5, Cold Shutdown.

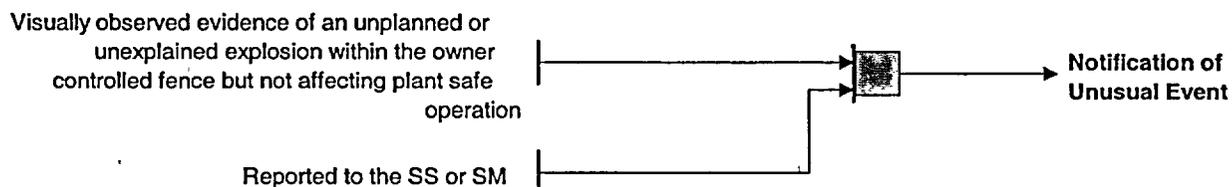
(EAL Ref Manual 17C)



Condition 17 : Hazards to Plant Operations

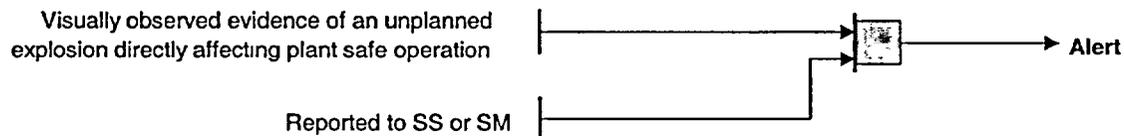
Near or onsite explosion

(EAL Ref Manual 17D)



Known explosion damage to facility affecting plant operation

(EAL Ref Manual 17E)



Condition 17 : Hazards to Plant Operations

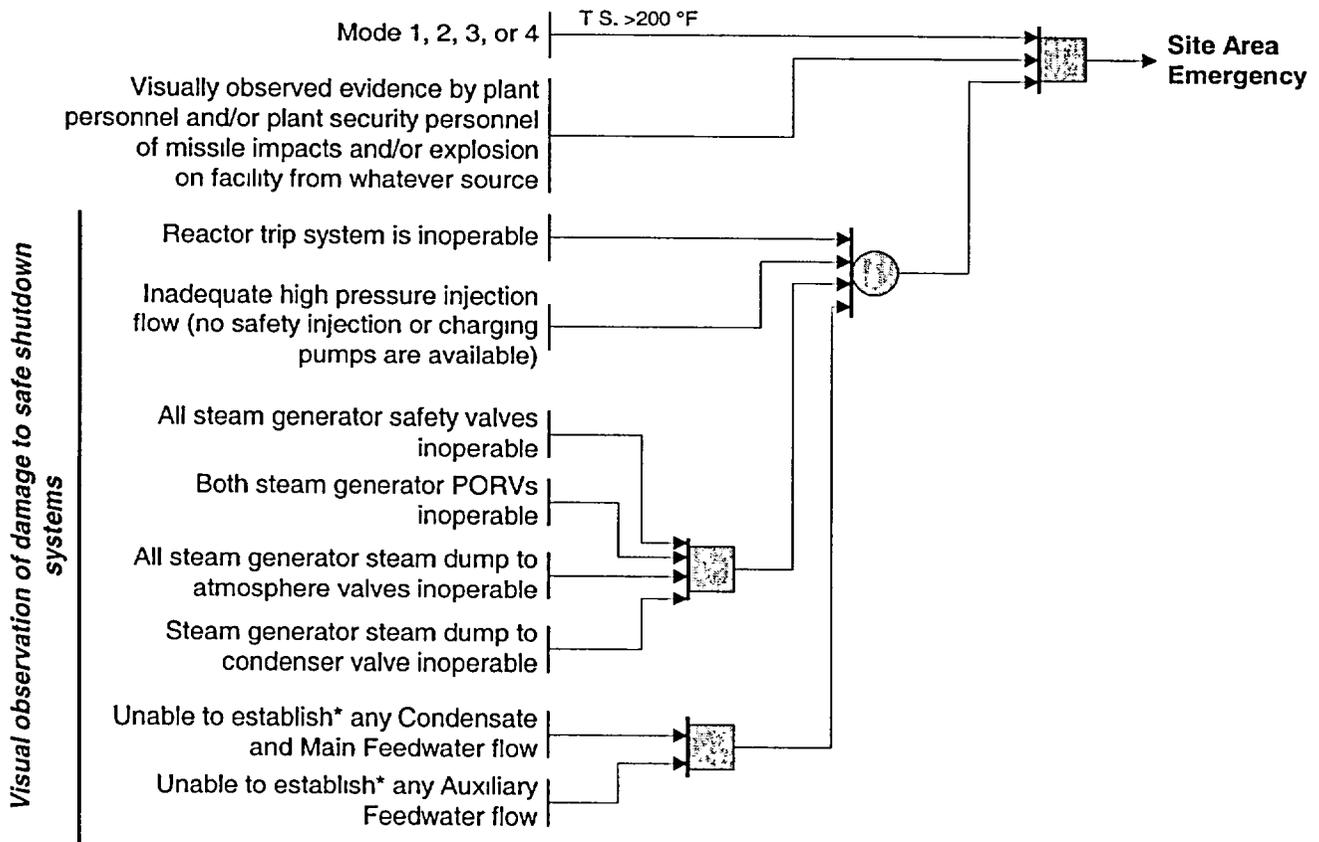
Missile impacts from whatever source on facility

(EAL Ref Manual 17F)

Visually observed evidence by plant personnel and/or plant security personnel of missile impacts on facility from whatever source → Alert

Severe damage to safe shutdown equipment from missiles or explosion with plant not in Mode 5, Cold Shutdown

(EAL Ref Manual 17G)



Note:

* "Unable to establish" criteria met if procedural attempt to establish condition has been made, but was unsuccessful or if an attempt cannot be made.

Condition 17 : Hazards to Plant Operations

Near or onsite toxic or flammable gas release

(EAL Ref Manual 17H)

Widespread toxic or flammable gaseous hazard being experienced or projected onsite (outside of plant) leading to evacuation or sheltering of personnel outside the plant

Receipt of recommendation by Local, County or State Officials to evacuate personnel from site based on an offsite hazardous or flammable gaseous release event



Notification of Unusual Event

Entry into the plant environs of toxic or flammable gases

(EAL Ref Manual 17I)

Explosive gas concentrations being measured within the plant at a distance of greater than 10 feet from the source

> explosive limits

Toxic gaseous concentrations being measured within a large area of the plant at the breathing zone

- > 50 ppm hydrazine
- > 300 ppm ammonia
- > 50 ppm hydrochloric acid
- > 1400 ppm morpholine
- > 30 ppm ethanolamine (ETA)
- > IDLH for any toxic gas (see D14 4 AOP 1)

Note IDLH = Immediately Dangerous to Life or Health.
IDLH Reference: NIOSH Pocket Guide to Chemical Hazards, June 1994

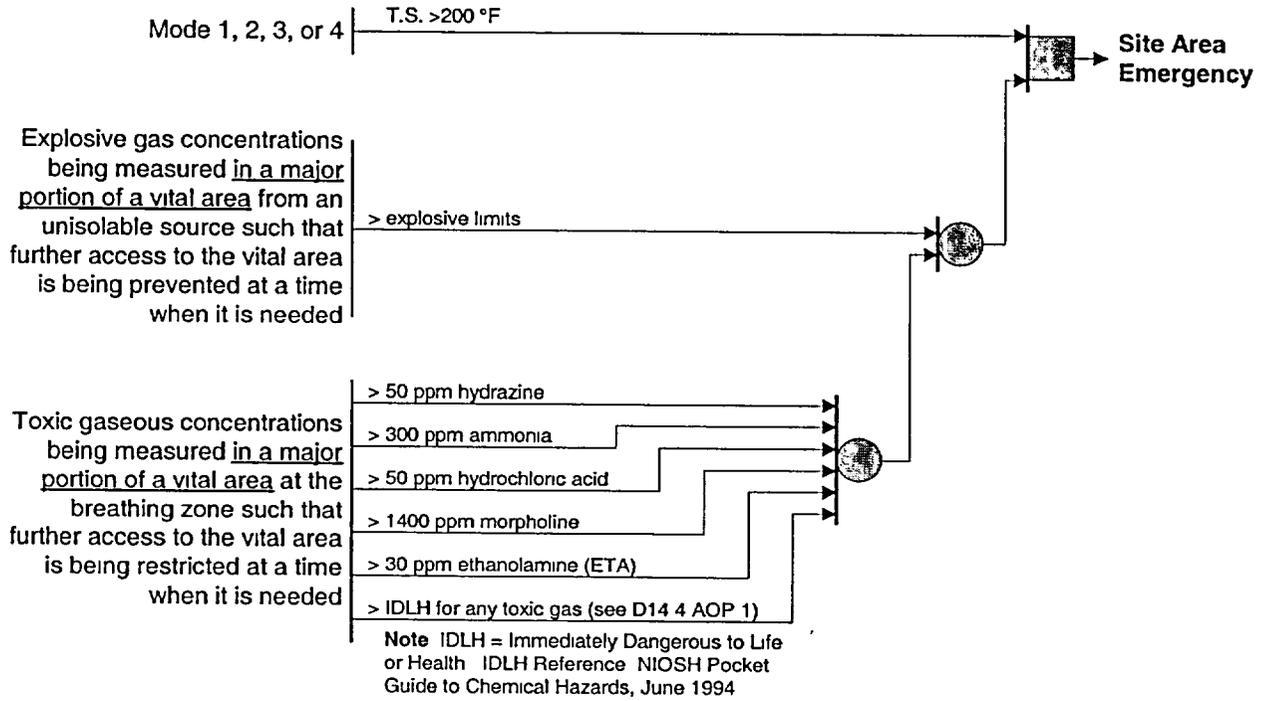


Alert

Condition 17 : Hazards to Plant Operations

Entry of toxic or flammable gases into vital areas with plant not in Mode 5, Cold Shutdown.

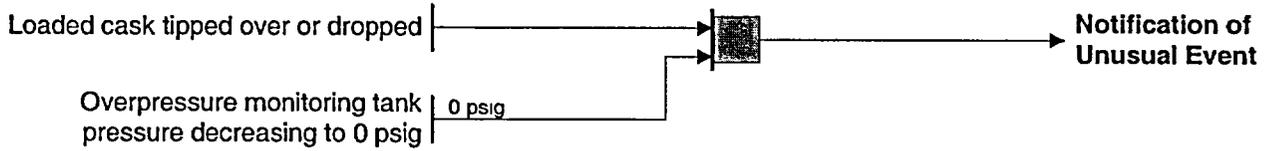
(EAL Ref Manual 17J)



Condition 18 :ISFSI Events

ISFSI cask tip over or drop resulting in cask seal leakage

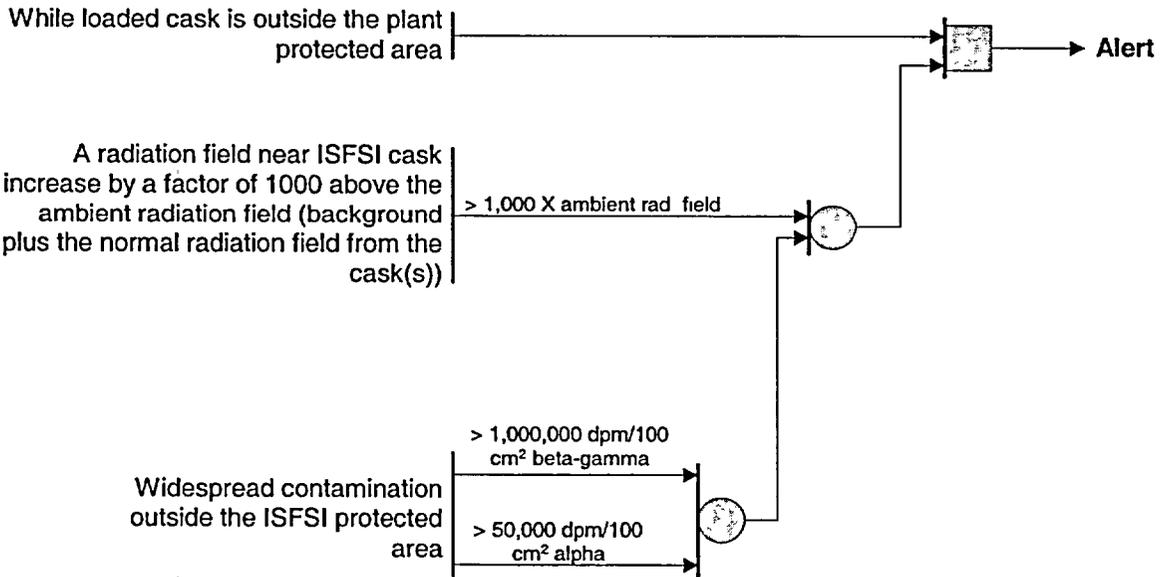
(EAL Ref Manual 18A)



Loss of ISFSI cask/fuel containment barrier

(EAL Ref Manual 18B)

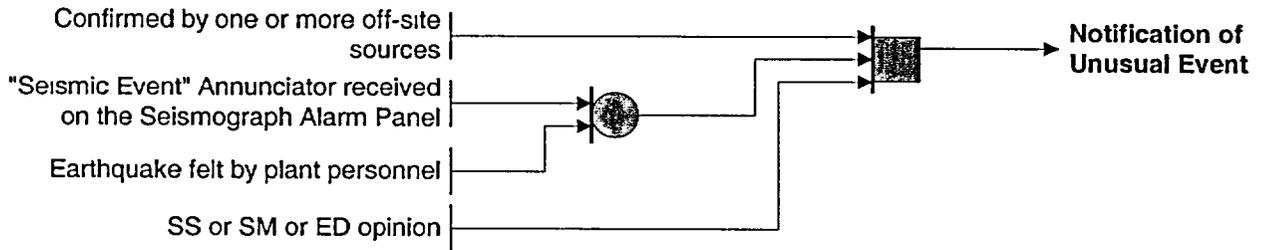
Physical breach of cask indicated by Radiation Survey Team measure results of:



Condition 19 : Natural Events

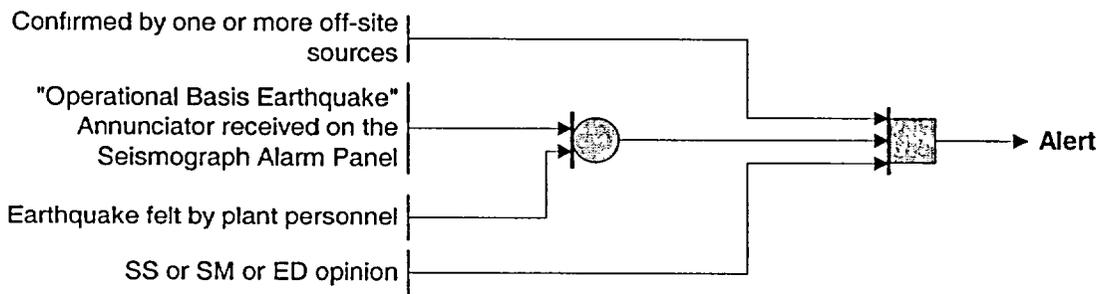
Any confirmed earthquake

(EAL Ref Manual 19A)



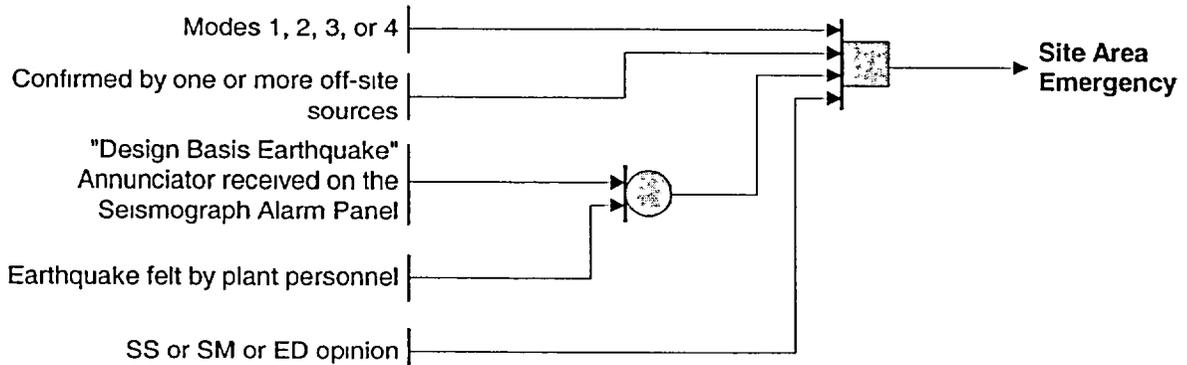
Earthquake greater than Operational Basis Earthquake

(EAL Ref Manual 19B)



Earthquake greater than Design Basis Earthquake with plant not in Mode 5, Cold Shutdown

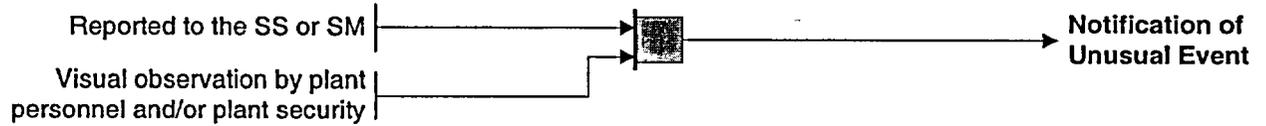
(EAL Ref Manual 19C)



Condition 19 : Natural Events

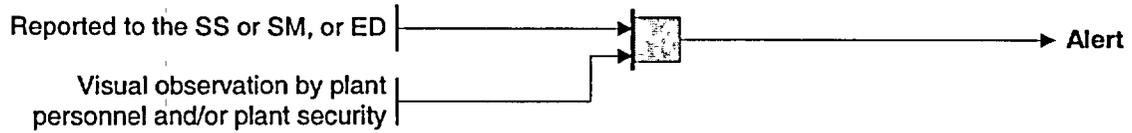
Any tornado on site

(EAL Ref Manual 19D)



Any tornado striking the facility

(EAL Ref Manual 19E)



Condition 19 : Natural Events

50 Year Flood

(EAL Ref Manual 19F)

River Intake Elevation | $> 686 \text{ ft}$ → Notification of Unusual Event

Flood levels approaching design levels

(EAL Ref Manual 19G)

River Intake Elevation -
(USAR 2.4.3 5) - requires both units to
be shut down to Mode 2, 3, 4 or 5 | $> 692 \text{ ft}$ → Alert

**Flood levels exceeding design levels
with plant not in Mode 5, Cold Shutdown**

(EAL Ref Manual 19H)

Mode 1, 2, 3, or 4 | $T S > 200 \text{ }^\circ\text{F}$ → [] → Site Area Emergency

River Intake Elevation - Power
operation design level (highest level
transformers will function) | $> 698 \text{ ft}$ → [] → Site Area Emergency

Condition 19 : Natural Events

Low water levels being experienced or projected beyond usual levels.

(EAL Ref Manual 19I)



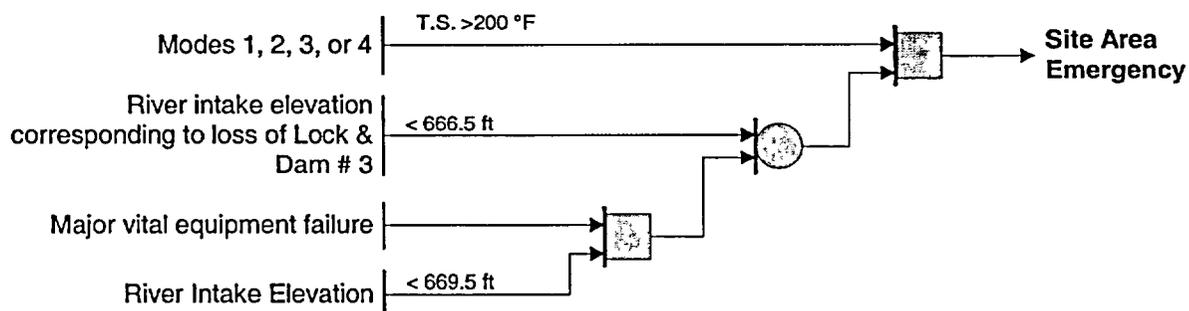
Low water levels being experienced or projected to be near design levels.

(EAL Ref Manual 19J)



With plant not in Mode 5, Cold Shutdown, low water levels being experienced or projected to be less than design levels, or failure of vital equipment with low water level.

(EAL Ref Manual 19K)



Condition 19 : Natural Events

Sustained winds being experienced or projected near design levels.

(EAL Ref Manual 19L)

Sustained wind speed indicated by met tower > 90 mph → Alert

Sustained winds being in excess of design levels being experienced or projected with plant not in Mode 5, Cold Shutdown.

(EAL Ref Manual 19M)

Modes 1, 2, 3, or 4 | T.S >200 °F
Sustained wind speed indicated by met tower > 100 mph → Site Area Emergency

Any major internal or external events (e.g., fires, earthquake, substantially beyond design levels) which could or has caused massive damage to plant systems resulting or potential for resulting in large releases to the offsite environment in excess of the EPA Protective Action Guides.

(EAL Ref Manual 19N)

As determined by the SS, SM, or ED → General Emergency

Condition 20 : Other

Conditions that warrant increased awareness on the part of plant operation staff or state and/or local offsite authorities.

(EAL Ref Manual 20A)

SM and SS concurrence that plant conditions warrant increased awareness

Notification of Unusual Event

Inability to reach required shutdown within Technical Specification Limits.

(EAL Ref Manual 20B)

T.S.ACTION TABLE not met requires plant shutdown or cooldown
Reactor power reduction or cooldown requirements have been exceeded

Notification of Unusual Event

Conditions that involve other than normal controlled shutdown.

(EAL Ref Manual 20C)

Reactor power reduction or cooldown has been initiated
Emergency Safeguard Function equipment did NOT perform its function if required
Cooldown rate exceeded Tech Spec Limit
SS or SM opinion that lack of control of shutdown or cooldown warrants offsite agency notification

Notification of Unusual Event

Condition 20 : Other

Conditions that warrant activation of Technical support Center and nearsite Emergency Operation Facility

(EAL Ref Manual 20D)

SS, SM, or ED opinion



Alert

Other plant conditions that warrant activation of emergency operation centers and monitoring teams or a precautionary notification to the public near the site

(EAL Ref Manual 20E)

SS, SM, or ED opinion



Site Area
Emergency

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

(EAL Ref Manual 20F)

SS, SM, or ED opinion



General
Emergency