



Nebraska Public Power District
Nebraska's Energy Leader

NLS2000080
August 29, 2000

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

Gentlemen:

Subject: Emergency Plan Implementing Procedure
Cooper Nuclear Station, NRC Docket 50-298, DPR-46

Pursuant to the requirements of 10 CFR 50, Appendix E, Section V, "Implementing Procedures," Nebraska Public Power District is transmitting the following Emergency Plan Implementing Procedure (EPIP):

EPIP 5.7.1 Revision 26 "Emergency Classification"

Should you have any questions concerning this matter, please contact me.

Sincerely,

R. L. Zipfel
Emergency Preparedness Manager

/nr
Enclosure

cc: Regional Administrator w/enclosure (2)
USNRC - Region IV

Senior Resident Inspector w/enclosure
USNRC

NPG Distribution w/o enclosure

A045

<u>CNS OPERATIONS MANUAL</u> EPIP 5.7.1 EMERGENCY CLASSIFICATION	USE: REFERENCE  EFFECTIVE: 8/24/00 APPROVAL: SORC OWNER: J. B. PERGERSON DEPARTMENT: EP
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1. PURPOSE

This procedure provides the formal set of threshold conditions necessary to classify an event at CNS into one of the four emergency classifications described in NUREG-0654 and the CNS Emergency Plan.

2. PRECAUTIONS AND LIMITATIONS

- 2.1 The steps required by this procedure are in addition to the steps required to maintain or restore the station to a safe condition.
- 2.2 If conflicts in personnel assignments or sequence of actions arise, first priority will be given to maintaining or restoring the station to a safe condition.

3. REQUIREMENTS

- 3.1 An Emergency Operation Procedure has been initiated; or
- 3.2 An unusual occurrence has taken place at or near the site.

4. CLASSIFICATION AND DECLARATION

- 4.1 After recognition of an off-normal event, Shift Supervisor shall:

- [] 4.1.1 Compare the event to EALs in Attachments 1 and 5.

- 4.1.2 If more than one EAL of different classification levels is reached, i.e., an EAL for ALERT or an EAL for SITE AREA EMERGENCY, select EAL for most severe emergency classification.
- 4.1.3 If the event appears to meet an EAL, refer to Attachment 2 for further explanation and guidance.
- 4.1.4 If it is determined that an EAL is met:
 - 4.1.4.1 Assume Emergency Director responsibilities until relieved by another qualified Emergency Director.
 - 4.1.4.2 Declare the emergency.
 - 4.1.4.3 Record the emergency class, time of declaration, and EAL number in the Shift Supervisor's Log.
 - 4.1.4.4 Enter Procedure 5.7.2 and perform the actions directed.
 - 4.1.4.5 Continue to monitor and re-evaluate emergency classification per this procedure until the event is terminated.
- 4.1.5 When relieved of Emergency Director duties by another qualified Emergency Director located in the EOF, the Shift Supervisor shall no longer be responsible for performance of actions specified in this procedure or Procedure 5.7.2.
 - 4.1.5.1 The Emergency Director may direct the Shift Supervisor to perform specific actions, such as activation of emergency alarm, which can only be performed from the Control Room.
 - 4.1.5.2 The Shift Supervisor shall bring to the attention of the Emergency Director, changing plant conditions which may affect the emergency classification.

5. CLASSIFICATION GUIDANCE

5.1 Four standardized emergency classes have been established; they are:

5.1.1 NOTIFICATION OF UNUSUAL EVENT

5.1.1.1 This classification is comprised of events in progress, or which have occurred, that indicate a potential degradation of the level of safety of the station. These types of events may progress to a more severe emergency classification if they are not mitigated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

5.1.2 ALERT

5.1.2.1 This classification is comprised of events in progress, or which have occurred, that involve an actual or potentially substantial degradation of the safety level of the station. At this classification level, minor releases of radioactivity may occur or may have occurred. Any releases expected to be limited to small fractions of EPA Protective Action Guideline exposure levels.

5.1.3 SITE AREA EMERGENCY

5.1.3.1 This classification is comprised of events in progress, or which have occurred, which involve actual or potential major failure of plant functions needed for protection of the public. Releases are not expected to exceed EPA Protective Action Guidelines, except near the Site Boundary.

5.1.4 GENERAL EMERGENCY

5.1.4.1 This classification is comprised of events in progress, or which have occurred, that involve actual or imminent substantial core degradation or melting with a potential for the loss of primary containment integrity. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.

5.2 Possible events are divided into eight categories which are intended to bracket the Initiating Conditions listed in NUREG-0654, Revision 1, Appendix 1, as further defined and revised by Reference 3.3.6. The eight categories are:

5.2.1 Radiological.

5.2.2 Fission product barrier threat or loss.

- 5.2.3 Operational.
- 5.2.4 Power or alarms.
- 5.2.5 Fire; flammable or toxic material.
- 5.2.6 Security.
- 5.2.7 Natural phenomenon.
- 5.2.8 Other hazards.

5.3 Prompt recognition of the occurrence of one or more initiating events may prevent the situation from progressing to a classification of greater severity.

5.4 An emergency may warrant classification as a result of a combination of two or more events. Ensure each abnormal condition is evaluated against classification criteria.

5.5 The EAL Matrix (Attachments 1 and 5) is designed to assist in quickly locating the appropriate category of accident. The matrix is not to be used independently of the rest of the procedure when making classification decisions.

5.6 For classification purposes, grams, CCs, and milliliters are equivalent.
 $1 \mu\text{Ci/gm} \sim 1 \mu\text{Ci/cc} \sim 1 \mu\text{Ci/ml}$

6. RECLASSIFICATION

6.1 An emergency may escalate to a higher classification if station conditions deteriorate or as a result of a combination of two or more events.

6.2 An emergency may be initially classified at one class and, upon further investigation or after corrective actions, may be reclassified or terminated.

6.3 If any GENERAL EMERGENCY has been declared, consultation with state authorities and the NRC should occur prior to reclassification or termination of the event.

6.4 Compare changing station conditions with the Emergency Action Levels in Attachment 2 and reclassify, as necessary.

ATTACHMENT 1 EAL MATRIX

Emergency Class	NOUE	Alert
Radiological	1.1.1 Uncontrolled, unmonitored radiological release of liquid outside the Protected Area. 1.1.2 Offsite Dose Assessment Manual (ODAM) limits exceeded as indicated by a HIGH-HIGH alarm on a gaseous effluent radiological monitor which cannot be cleared within 30 minutes.	1.2.1 <u>Loss of control</u> of radioactive material resulting in area radiation exceeding 1000X normal (or expected) levels within the Protected Area. Normal is determined by trend recorder or other relevant data. 1.2.2 Gaseous effluent radiological monitors indicate a release rate ten times the Offsite Dose Assessment Manual (ODAM) limits, without indication of fuel cladding loss.
Fission Product Barrier Threat or Loss	2.1.1 Steam Jet Air Ejector radiation monitor reads > 1.5 E+3 mrem/hr or an increase of 3.0 E+2 mrem/hr within a 30 minute period. 2.1.2 Coolant sample activity exceeds 4 µCi/gm DOSE EQUIVALENT I-131. 2.1.3 Any operational RCS pressure boundary LEAKAGE; or unidentified LEAKAGE exceeds 5 gpm; or total LEAKAGE exceeds 30 gpm averaged over a previous 24 hour period; or unidentified LEAKAGE increase of more than 2 gpm within the previous 24 hour period in MODE 1.	2.2.1 Loss of fuel cladding or Primary Coolant Boundary fission product barriers (refer to Attachment 3 for indication).
Operational	3.1.1 Inability to meet the Action Statement associated with a Technical Specification Limiting Condition for Operation (LCO).	3.2.1 Fuel handling accident on the refueling floor with release of radioactivity to secondary containment as indicated by HIGH alarm on refueling floor ARM #2, CAM, or Reactor Building ventilation monitor. 3.2.2 Evacuation of Control Room required or anticipated with control of shutdown systems established from local stations. 3.2.3 Complete loss of capability to place or maintain the plant in MODE 4 or 5. 3.2.4 Failure of Reactor Protection System (RPS) to initiate and complete a scram which brings the reactor subcritical.
Power or Alarms	4.1.1 Loss of ALL offsite power sources to vital busses "F" and "G" for greater than 15 minutes. 4.1.2 Unplanned loss of most or all safety system annunciators.	4.2.1 Loss of all AC power (on and offsite sources) to vital busses "F" and "G" during MODE 4 or 5. 4.2.2 Loss of all DC power sources resulting in loss of all ECCS capability for < 15 minutes. 4.2.3 Unplanned loss of most or all safety system annunciators with a transient in progress.
Fire Flammable Toxic	5.1.1 Any fire <u>within the Protected Area</u> which takes longer than 10 minutes to extinguish. 5.1.2 Report or detection of toxic or flammable gases that could enter the Protected Area in amounts that will affect the health of plant personnel or can effect normal operation of the plant.	5.2.1 A fire with a potential to cause degradation of a plant safety system required to be OPERABLE. 5.2.2 Report or detection of toxic or flammable gases within a Vital Area in concentrations that will be life threatening to plant personnel or will affect the safe operation of the plant.
Security	6.1.1 Security threat, attempted entry, or attempted sabotage.	6.2.1 On-going security compromise.
Natural Phenomenon	7.1.1 Ground motion > 0.01g as indicated by Control Room seismic monitoring panel. 7.1.2 River level greater than 899' or less than 867'. 7.1.3 Tornado touching down within the Owner Controlled Area. 7.1.4 Sustained wind speed > 74 mph.	7.2.1 Ground motion > 0.1g as indicated by Control Room seismic monitoring panel. 7.2.2 River level > 902' or < 865'. 7.2.3 Tornado touching down within the Protected Area. 7.2.4 Sustained wind speed greater than 95 mph.
Other Hazards	8.1.1 Aircraft crash within the Protected Area. 8.1.2 Explosion within the Protected Area. 8.1.3 Failure of a turbine rotating component causing an automatic reactor scram with release of radioactivity to the Turbine Building or which potentially affects safety systems. 8.1.4 Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Usual Event.	8.2.1 Aircraft striking structures within the Protected Area. 8.2.2 Missile impact, from whatever source, within the Protected Area. 8.2.3 Known explosion damage to the facility affecting plant operation. 8.2.4 Turbine failure causing casing penetration which creates serious radiological concerns or damages plant safety systems. 8.2.5 Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Alert.

ATTACHMENT 1 EAL MATRIX

Site Area Emergency	General Emergency
<p>1.3.1 Radiological gaseous effluent releases resulting in Total Effective Dose Equivalent (TEDE) projection at or beyond the Site Boundary of > 0.1 REM.</p> <p>1.3.2 Radiological gaseous effluent releases resulting in Committed Dose Equivalent (CDE) (thyroid) projection at or beyond the Site Boundary of > 0.5 REM.</p>	<p>1.4.1 Radiological gaseous effluent releases resulting in Total Effective Dose Equivalent (TEDE) dose at or beyond the Site Boundary of 1 REM.</p> <p>1.4.2 Radiological gaseous effluent releases resulting in Committed Dose Equivalent (CDE) (thyroid) dose at or beyond the Site Boundary of 5 REM.</p>
<p>2.3.1 Degraded core with a possible loss of coolable geometry as indicated by:</p> <p>A.1 Greater than or equal to 20% gap activity as determined by Chemistry. OR A.2 Primary Containment radiation monitors read > 1.0 E+4 REM/hr. AND B.1 High core plate Dp for the corresponding core flow. OR B.2 Inability to insert in-core detectors.</p> <p>2.3.2 Known loss of coolant accident greater than makeup capacity.</p> <p>2.3.3 Loss of any TWO fission product barriers. The fission product barriers are defined as follows (refer to Attachment 3 for indication):</p> <p>A. Fuel Cladding. B. Primary Coolant Boundary. C. Primary Containment.</p>	<p>2.4.1 Loss of any TWO of THREE fission product barriers AND the <u>potential</u> exists for <u>loss</u> of the THIRD. The fission product barriers are defined as follows (refer to Attachment 3 for indication):</p> <p>A. Fuel Cladding. B. Primary Coolant Boundary. C. Primary Containment.</p>
<p>3.3.1 Major damage to irradiated fuel or fuel pool water level below the top of the spent fuel.</p> <p>3.3.2 Evacuation of the Control Room accompanied by the inability to locally control shutdown systems within 15 minutes.</p> <p>3.3.3 Complete loss of all available means to place or maintain the plant in MODE 3.</p> <p>3.3.4 Failure of the Reactor Protection System (RPS), including Alternate Rod Insertion (ARI), to bring the reactor subcritical.</p>	<p>3.4.1 Failure of the Reactor Protection System (RPS) or alternate rod insertion or SLC to bring the reactor subcritical which could result in a core meltdown with subsequent containment failure likely.</p> <p>3.4.2 Other plant conditions exist, from whatever source, which make a release of large amounts of radioactivity in a short time possible (e.g., any core melt situation).</p>
<p>4.3.1 Loss of all AC power (on and offsite sources) for more than 15 minutes with the Reactor in MODE 1, 2, or 3.</p> <p>4.3.2 Loss of all DC power sources required for ECCS operation for more than 15 minutes.</p> <p>4.3.3 Inability to monitor a significant transient in progress.</p>	<p>4.4.1 Total loss of all AC power (on and offsite sources) with the inability to keep the core covered.</p>
<p>5.3.1 Fire compromising the functions of safety systems.</p>	<p>5.4.1 Any major internal or external fire substantially beyond the design basis which could cause massive common damage to plant systems.</p>
<p>6.3.1 Imminent loss of physical control of the station.</p>	<p>6.4.1 Loss of physical control of the station.</p>
<p>7.3.1 Ground motion > 0.1g as indicated on the Control Room seismic monitoring panel AND reports of major plant damage.</p> <p>7.3.2 Sustained wind speed > 100 mph.</p> <p>7.3.3 Flood which renders multiple ECCS systems inoperable when they are required to be OPERABLE.</p> <p>7.3.4 Low river level which results in complete loss of the Service Water System.</p>	<p>7.4.1 Any major natural phenomenon <u>substantially beyond</u> the design basis which could cause massive common damage to plant systems.</p>
<p>8.3.1 Aircraft crash affecting vital areas with the plant in MODE 1, 2, or 3.</p> <p>8.3.2 Missile or explosion damage to safe shutdown equipment with the plant in MODE 1, 2, or 3.</p> <p>8.3.3 Other conditions existing which in the judgement of the Emergency Director warrant declaration of a Site Area Emergency.</p>	<p>8.4.1 Other conditions existing which in the judgement of the Emergency Director warrant declaration of a General Emergency (i.e., any core melt situation).</p>

CLASSIFICATION

EAL: 1.1.1

NOUE

TEXT

Uncontrolled, unmonitored radiological release of liquid outside the Protected Area.

APPLICABILITY

ALL

EXAMPLE

Unisolable leak from a condensate storage tank into the discharge canal.

MEMO

The actual dose is generally not the primary concern; it is the degradation in plant control implied by the fact that the release was not isolated. To be conservative, it is to be assumed that any radiologically contaminated liquid released offsite in an uncontrolled, unmonitored fashion has the potential to exceed RETS limits. Therefore, any uncontrolled, unmonitored release of radioactive liquid outside the Protected Area will meet this EAL.

REFERENCES

NUREG-0654: N.02

CLASSIFICATION

EAL: 1.1.2

NOUE

TEXT

Offsite Dose Assessment Manual (ODAM) limits exceeded as indicated by a HIGH-HIGH alarm on a gaseous effluent radiological monitor which cannot be cleared within 30 minutes.

APPLICABILITY

ALL

EXAMPLE

Turbine Building KAMAN alarms. "TG BLDG VENT HIGH-HIGH RAD" annunciator is received. Release is verified, but cannot be stopped.

MEMO

The HIGH-HIGH alarm in the text of this EAL refers to the normal range KAMAN. Each gaseous effluent stream has two alarm setpoints. Under normal circumstances, the high alarm will come in first allowing operator action to stop or reduce the release. The HIGH-HIGH alarm is set at (or near) the RETS release rate limit. Because the RETS limit (being based on a yearly continuous dose projection) is extremely conservative, the 30 minute delay in verifying the alarm and attempting to clear it is justified.

Reduce power or isolate systems as appropriate. If alarm is valid, and release cannot be reduced to below RETS release rate limits or terminated in 30 minutes, declare.

REFERENCES

NUREG-0654: N.02

CLASSIFICATION

EAL: 1.2.1

ALERT

TEXT

Loss of control of radioactive material resulting in area radiation exceeding 1000X normal (or expected) levels within the Protected Area. Normal is determined by trend recorder or other relevant data.

APPLICABILITY

ALL

EXAMPLE

Radiography source becomes uncoupled and lost. RP survey indicates direct radiation has increased by > 1000 times.

MEMO

By themselves, indications of increased levels of radiation only meet the NOUE class description; however, when combined with "loss of control" a higher classification is warranted. Non-essential personnel should be assembled offsite. Additional manpower or other resources will likely be needed. The ALERT classification is appropriate.

The operative phrase in this EAL is "loss of control". Combined with this is the phrase "or expected levels". For most plant evolutions increases of radiation can be estimated, most within a factor of 1000. If, in the judgement of those concerned, control has been lost, AND radiation levels increase beyond 1000X normal or expected levels, declare.

REFERENCES

NUREG-0654: A.06

NUREG-0654: A.12

CLASSIFICATION

EAL: 1.2.2

ALERT

TEXT

Gaseous effluent radiological monitors indicate a release rate ten times the Offsite Dose Assessment Manual (ODAM) limits without indication of fuel cladding loss.

APPLICABILITY

ALL

EXAMPLE

Operating at 100% power AOG is lost. ERP KAMAN reading goes to 1.13 E+7 μ Ci/sec.

MEMO

This ERP KAMAN reading will exceed ten times the ODAM instantaneous limit. Rely on the PMIS "ten times ODAM Limit Exceeded" flag.

If there are any indications that the fuel cladding is not intact (fuel has been uncovered, SJAE monitors > 1.5 E+4 mrem/hr, PASS sample, Primary Containment radiation monitors > 2.5 E+3 REM/hr, or other) the iodine component will result in a higher dose and may also warrant a higher classification.

NOTE - Radiation release resulting in an ALERT is an EOP entry condition.

REFERENCES

NUREG-0654: A.15

CLASSIFICATION

EAL: 1.3.1

SITE AREA EMERGENCY

TEXT

Radiological gaseous effluent releases resulting in Total Effective Dose Equivalent (TEDE) projection at or beyond the Site Boundary of > 0.1 rem.

APPLICABILITY

ALL

EXAMPLE

ARW KAMAN reads 5 E+6 μ Ci/sec. With default wind speed (8 mph) and stability class (D), Standby Gas Treatment is not in the release path, the core is not degraded, secondary containment is bypassed, and the reactor not shutdown, an integrated dose for 4 hours at one mile of > 0.1 REM TEDE is projected.

MEMO

If a release greater than license limits is under way, or suspected, and any dose assessment model or methodology indicates a Site Boundary integrated TEDE dose of > 0.1 rem, classify and follow applicable procedures. This is the conservative response. Conservative is defined as that action which yields the greatest possible protection of the public from radiological consequences.

This EAL is related to integrated dose; therefore, the estimated length of release is critical to obtain an accurate integrated dose projection. As conditions change, dose projections should be re-calculated.

REFERENCES

NUREG-0654: S.13

CLASSIFICATION

EAL: 1.3.2

SITE AREA EMERGENCY

TEXT

Radiological gaseous effluent releases resulting in Committed Dose Equivalent (CDE) (thyroid) projection at or beyond the Site Boundary of > 0.5 REM.

APPLICABILITY

ALL

EXAMPLE

ERP KAMAN reads 2 E+6 μ Ci/sec. The core has been uncovered (dose assessment question on core degraded = YES). SGBT is not in the path. The reactor has been shutdown for 30 minutes and secondary containment has been bypassed. With default wind speed (13 mph) and stability class (D), a CDE dose > 0.5 rem over 4 hours is projected.

MEMO

If a release greater than license limits is under way, or suspected, and any dose assessment model or methodology indicates a Site Boundary integrated CDE dose of > 0.5 rem, classify and follow applicable procedures. This is the conservative response. Conservative is defined as that action which yields the greatest possible protection of the public from radiological consequences.

REFERENCES

NUREG-0654: S.13

CLASSIFICATION

EAL: 1.4.1

GENERAL EMERGENCYTEXT

Radiological gaseous effluent releases resulting in Total Effective Dose Equivalent (TEDE) dose at or beyond the Site Boundary of 1 REM.

APPLICABILITY

ALL

EXAMPLE

Turbine Building KAMAN reads $2 \text{ E}+8 \text{ } \mu\text{Ci/sec}$. With default wind speed (8 mph) and stability class (D), Standby Gas Treatment is not in the release path, the core is not degraded, secondary containment is not bypassed, the release is expected to last 4 hours, and the reactor not shutdown a TEDE dose $> 1 \text{ REM}$ is projected at or beyond one mile.

MEMO

If a release greater than license limits is under way, or suspected, and any dose assessment model or methodology indicates a Site Boundary TEDE dose of 1 rem or greater, classify and follow applicable procedures. This is the conservative response. Conservative is defined as that action which yields the greatest possible protection of the public from radiological consequences.

NUREG-0654 requires that a GENERAL EMERGENCY be declared when EPA Protective Action Guidelines are projected to be exceeded offsite.

Automatic MINIMUM Protective Action Recommendation (PAR) at a General Emergency is evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.01

CLASSIFICATION

EAL: 1.4.2

GENERAL EMERGENCYTEXT

Radiological gaseous effluent releases resulting in Committed Effective Dose (CDE) (thyroid) dose at or beyond the Site Boundary of 5 REM.

APPLICABILITY

ALL

EXAMPLE

Turbine KAMAN reads 2.6 E+6 μ Ci/sec. The core has been uncovered (dose assessment question on core degraded = YES). With wind default wind speed (8 mph) and stability class (D), Standby Gas Treatment is not in the release path, secondary containment is bypassed, the reactor is not shutdown, and the release is expected to last 4 hours, a CDE dose at or beyond 1 mile is projected to be > 5 REM.

MEMO

If a release greater than license limits is under way, or suspected, and any dose assessment model or methodology indicates a Site Boundary CDE dose rate of 5 rem/hr or greater, classify and follow applicable procedures. This is the conservative response. Conservative is defined as that action which yields the greatest possible protection of the public from radiological consequences.

NUREG-0654 requires that a GENERAL EMERGENCY be declared when EPA Protective Action Guidelines are projected to be exceeded offsite.

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY is evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.01

CLASSIFICATION

EAL: 2.1.1

NOUE

TEXT

Steam Jet Air Ejector radiation monitor reads $> 1.5 \text{ E}+3$ mrem/hr or an increase of $3.0 \text{ E}+2$ mrem/hr within a 30 minute period.

APPLICABILITY

ALL

EXAMPLE

RM-150A reads $> 1.5 \text{ E}+3$ mrem/hr.

MEMO

These numbers correspond to some fuel damage. They do not reflect a LOSS of the fuel cladding.

REFERENCES

NUREG-0654: N.03A

CLASSIFICATION

EAL: 2.1.2

NOUE

TEXT

Coolant sample activity exceeds 4.0 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.

APPLICABILITY

ALL

EXAMPLE

Rx coolant sample results indicate 5.0 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.

MEMO

0.2 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131 is the Tech Spec limit. The limit may be increased up to 4.0 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131 or less for a maximum of 48 hours to allow a reasonable time for temporary coolant activity increases (iodine spikes or crud bursts) to be cleaned up with the normal processing systems. If at any time the DOSE EQUIVALENT I-131 > 4.0 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131, it must be determined at least once every four (4) hours and all the main steam lines must be isolated with 12 hours. See LCO 3.4.6 for details.

REFERENCES

NUREG-0654: N.03B

Tech Spec 3.4.6

NOTE - For purposes of reactor coolant samples:1 $\mu\text{Ci/ml}$ ~ 1 $\mu\text{Ci/cc}$ ~ 1 $\mu\text{Ci/mg}$ dose equivalent I-131

CLASSIFICATION

EAL: 2.1.3

NOUE

TEXT

Operational RCS pressure boundary LEAKAGE; or unidentified LEAKAGE exceeds 5 gpm; or total LEAKAGE exceeds 30 gpm averaged over a previous 24 hour period; or unidentified LEAKAGE increase of more than 2 gpm within the previous 24 hour period in MODE 1.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

Sump integrators indicate leakage from the primary coolant boundary of 7 gpm unidentified.

MEMO

This leak rate constitutes entry into a LCO; however, this case will not wait for inability to meet associated action statement(s); therefore, declare a NOUE upon confirmation of the leak rate.

REFERENCES

NUREG-0654: N.05

CLASSIFICATION

EAL: 2.2.1

ALERTTEXT

Loss of Fuel Cladding or Primary Coolant Boundary fission product barriers (refer to Attachment 3 for indication).

APPLICABILITY

Per Technical Specifications

EXAMPLE

Reactor Recirculation pump seizure leading to fuel cladding failure.

PASS sample results show > 300 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131.

OR

Loss of Coolant Accident.

MEMO

Refer to Attachment 3 for indications of lost fission product barriers to ensure that only one barrier is lost. Loss of two barriers is a **SITE AREA EMERGENCY** (EAL: 2.3.3), loss of two barriers with the potential loss of the third is a **GENERAL EMERGENCY** (EAL: 2.4.1).

This EAL does not apply to failures of safety relief valves to seat during low pressure testing.

REFERENCES

NUREG-0654: A.01
NUREG-0654: A.04
NUREG-0654: A.05
NUREG-0654: A.09
NUREG-0654: N.06

CLASSIFICATION

EAL: 2.3.1

SITE AREA EMERGENCY

TEXT

Degraded core with a possible loss of coolable geometry as indicated by:

A.1 \geq 20% gap activity as determined by Chemistry.

OR

A.2 Primary Containment radiation monitors read $> 1.0 \text{ E}+4 \text{ REM/hr}$.

AND

B.1 High core plate Dp for the corresponding core flow (see EAL: 2.3.1A).

OR

B.2 Inability to insert in-core detectors.

APPLICABILITY

ALL

EXAMPLE

Drywell radiation monitors read $2 \text{ E}+4 \text{ REM/hr}$ following a transient. Traversing In-Core Probes cannot be inserted by any machine into the reference channel.

MEMO

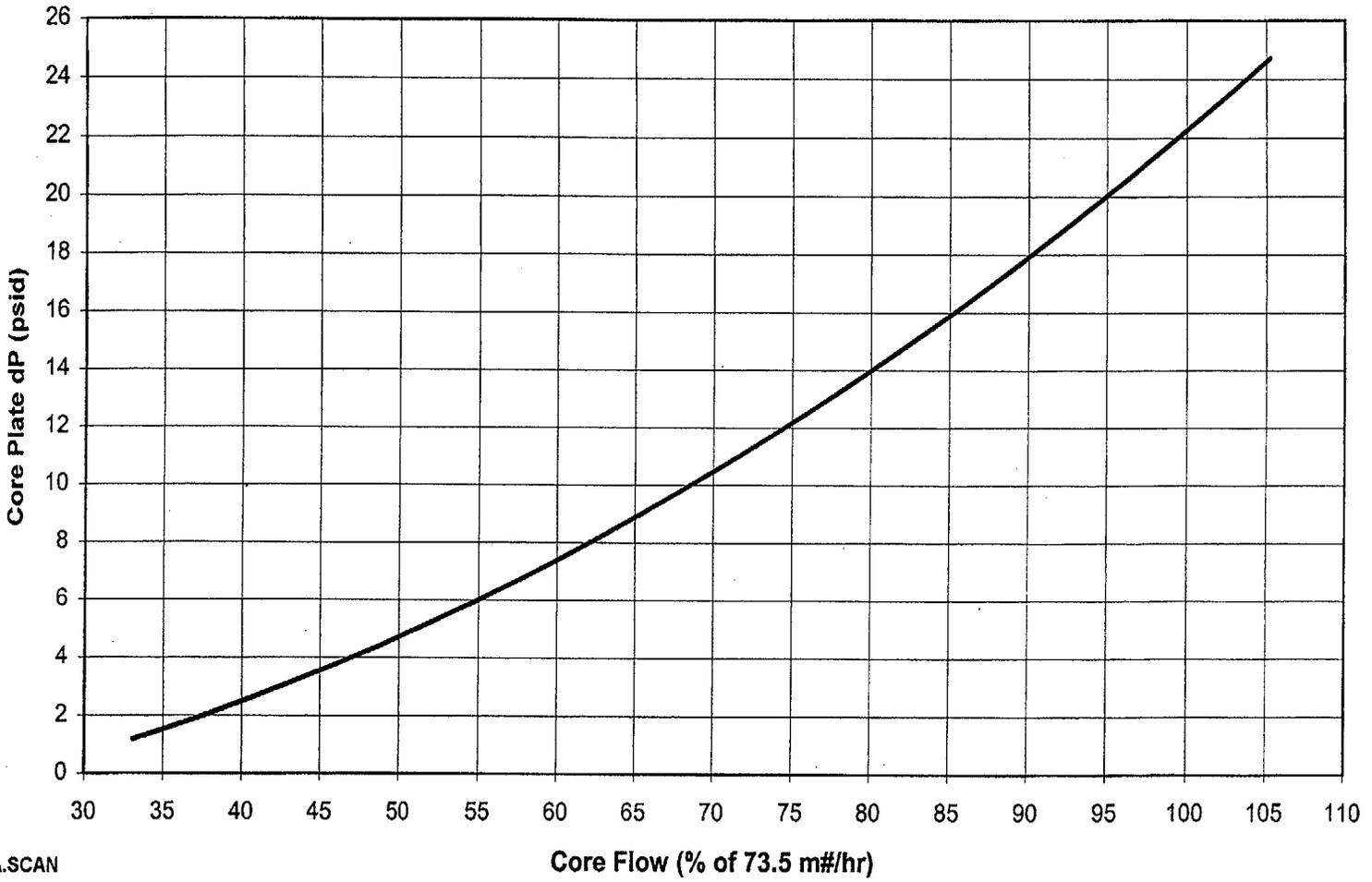
Could lead to further core degradation due to overheating.

Reference Dp vs. core flow chart, 2.3.1A (next page)

REFERENCES

NUREG-0654: S.02

Core Plate dP vs Core Flow
(for determination of degraded core)



5-7-1A.SCAN

EAL: 2.3.1A

CLASSIFICATION

EAL: 2.3.2

SITE AREA EMERGENCY

TEXT

Known loss of coolant accident greater than makeup capacity.

APPLICABILITY

ALL

EXAMPLE

LOCA greater than RCIC capacity with HPCI inop and inability to depressurize.

MEMO

This EAL is a combination of loss of one fission product barrier (RPV) and other major failures. It therefore meets the class description for SITE AREA EMERGENCY of NUREG-0654.

Follow Emergency Operating Procedures (EOPs). If all means to maintain level in the reactor fail, declare.

REFERENCES

NUREG-0654: S.01

CLASSIFICATION

EAL: 2.3.3

SITE AREA EMERGENCY

TEXT

Loss of any TWO fission product barriers. The fission product barriers are defined as follows:

- A. Fuel Cladding.
- B. Primary Coolant Boundary.
- C. Primary Containment.

APPLICABILITY

Per Technical Specifications.

EXAMPLE

Steam line break outside primary containment without isolation from the Control Room.

OR

100 gpm leak into Primary Containment following fuel failure (> 300 $\mu\text{Ci/gm}$ DOSE EQUIVALENT I-131).

OR

Primary Containment isolation failures allowing a direct flow path to the environment such as failures of both MSIVs to close with open valves downstream to the turbine or to the condenser.

MEMO

TWO, and only two, fission product barriers must meet the criteria for being considered lost. If there is only one barrier lost, see EAL: 2.2.1. If there is the potential for loss of the third barrier a GENERAL EMERGENCY shall be declared on EAL: 2.4.1.

See Attachment 3 for indications of loss or potential loss of fission product barriers.

REFERENCES

NUREG-0654: S.04

CLASSIFICATION

EAL: 2.4.1

GENERAL EMERGENCYTEXT

Loss of any TWO of THREE fission product barriers AND the potential exists for the loss of the THIRD. The fission product barriers are defined as follows:

- A. Fuel Cladding.
- B. Primary Coolant Boundary.
- C. Primary Containment.

APPLICABILITY

Per Technical Specifications.

EXAMPLE

LOCA with core damage and drywell pressure is nearing design pressure, OR two MSIVs on the same steam line cannot be isolated from the Control Room and chemistry data trends indicate fuel cladding is deteriorating.

MEMO

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY of evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

See Attachment 3 for indications of loss or potential loss of fission product barriers.

REFERENCES

NUREG-0654: G.02

NUREG-0654: G.06

CLASSIFICATION

EAL: 3.1.1

NOUE

TEXT

Inability to meet the action statement associated with a Technical Specification Limiting Condition for Operation (LCO).

APPLICABILITY

Per Technical Specifications.

EXAMPLE

Following discovery that one of the 125 volt batteries is inoperable, the battery was not restored to OPERABLE status within 2 hours, nor was MODE 3 achieved within the following 12 hours.

MEMO

Declaration of **NOUE** is warranted by failure to meet the action statement of a Limiting Condition for Operation (LCO). This constitutes a condition outside that analyzed by Technical Specifications. The **NOUE** may not be terminated until the action statement has been met. This varies; reference the Tech Specs.

REFERENCES

NUREG-0654: N.08

NUREG-0654: N.09

NUREG-0654: N.15

CLASSIFICATION

EAL: 3.2.1

ALERT

TEXT

Fuel handling accident on the refueling floor with release of radioactivity to secondary containment as indicated by HIGH alarm on refueling floor ARM #2, CAM, or Reactor Building ventilation monitor.

APPLICABILITY

ALL

EXAMPLE

Dropped fuel bundle, bubbles appear near the impact zone, ARM #2 alarms.

MEMO

For major damage, see EAL: 3.3.1.

REFERENCES

NUREG-0654: A.12

CLASSIFICATION

EAL: 3.2.2

ALERTTEXT

Evacuation of Control Room required or anticipated with control of shutdown systems established from local stations.

APPLICABILITY

ALL

EXAMPLE

Electrical fire in the Control Room causes evacuation. ASD accomplished.

MEMO

Do not delay alternate shutdown. Declare ALERT and note time. Make required notifications as soon as possible. If control of shutdown systems cannot be accomplished within 15 minutes, EAL: 3.3.2 applies.

This EAL does not say that all actions associated with ASD shall be completed in order to avoid the higher EAL pertaining to Control Room evacuation (EAL: 3.3.2). If the reactor successfully scrams, level and pressure are being controlled, and no impediments to the associated ASD activities are being encountered, this emergency classification is appropriate. If impediments are being encountered in completing critical ASD functions and more than 15 minutes expire, EAL: 3.3.2 is met.

REFERENCES

NUREG-0654: A.20

CLASSIFICATION

EAL: 3.2.3

ALERT

TEXT

Complete loss of all capability to place or maintain the plant in MODE 4 or MODE 5.

APPLICABILITY

Irradiated fuel in the vessel.

EXAMPLE

Loss of both LPCI Subsystems following a scram from startup.

MEMO

Loss of MODE 4 capability while at power would be adequately covered by Tech Specs, but does not warrant an ALERT.

Follow appropriate procedures. Attempt alternate means of cooling if required. If all means to place or maintain the reactor < 212°F fail, declare. Monitor plant for indications of other EAL thresholds.

REFERENCES

NUREG-0654: A.10

CLASSIFICATION

EAL: 3.2.4

ALERTTEXT

Failure of Reactor Protection System (RPS) to initiate and complete a scram which brings the reactor subcritical.

APPLICABILITY

Reactor critical.

EXAMPLE

RPS initiated scram with half the control rods not full in (hydraulic lock caused by an undrained scram discharge volume). Continued power generation.

MEMO

A failure of RPS in this EAL is a failure of either the automatic trip systems or the manual scram pushbuttons to initiate and complete a scram which brings the reactor subcritical. If ARI also fails, see EAL 3.3.4. Subcritical is defined as all but one rod full-in, all rods inserted to or beyond Position 02, OR a qualified Reactor Engineer has determined reactor will remain subcritical under all conditions without boron injection.

REFERENCES

NUREG-0654: A.11

CLASSIFICATION

EAL: 3.3.1

SITE AREA EMERGENCY

TEXT

Major damage to irradiated fuel or fuel pool water level below the top of the spent fuel.

APPLICABILITY

ALL

EXAMPLE

Shipping cask head dropped on spent fuel. Several fuel bundles prepared for shipment (de-channeled) are crushed.

MEMO

Major fuel damage is defined as "affecting more than ten irradiated fuel bundles". It is anticipated that no fuel handling accident associated with normal fuel handling could cause this EAL to be met. Only large objects (such as fuel shipping casks) dropped on fuel, or uncovery of the fuel could meet this EAL.

REFERENCES

NUREG-0654: S.10

CLASSIFICATION

EAL: 3.3.2

SITE AREA EMERGENCY

TEXT

Evacuation of the Control Room accompanied by the inability to locally control shutdown systems within 15 minutes.

APPLICABILITY

ALL

EXAMPLE

Electrical fire in the control room causes evacuation. Shutdown systems are not responding properly from the ASD panel.

MEMO

An ALERT should have been declared on EAL: 3.2.1 upon evacuation of the Control Room. When local control cannot be achieved in 15 minutes, a SITE AREA EMERGENCY shall be declared.

REFERENCES

NUREG-0654: S.18

CLASSIFICATION

EAL: 3.3.3

SITE AREA EMERGENCY

TEXT

Complete loss of all available means to place or maintain the plant in MODE 3.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

Shutdown margin cannot be maintained.

MEMO

Could lead to fuel cladding failure.

Carefully monitor plant parameters for indications of fission product barrier loss. Attempt alternate means of heat removal. If all means of heat removal fail, declare. Escalation of this EAL to a General Emergency is based on actual or imminent substantial core degradation or melting with potential for loss of primary containment.

REFERENCES

NUREG-0654: S.08

CLASSIFICATION

EAL: 3.3.4

SITE AREA EMERGENCY

TEXT

Failure of the Reactor Protection System (RPS), including Alternate Rod Insertion (ARI), to bring the reactor subcritical.

APPLICABILITY

Reactor critical.

EXAMPLE

Low reactor water level scram with hydraulic lock on all the north HCU's. Half the rods remain un-inserted. Continued power generation.

MEMO

If any scram signal and initiation of ARI fails to bring the reactor subcritical, a SITE AREA EMERGENCY based on this EAL exists.

Subcritical is defined as all but one rod full-in, all rods inserted to or beyond Position 02, OR a qualified Reactor Engineer has determined reactor will remain subcritical under all conditions without boron injection.

Escalation of this EAL to a GENERAL EMERGENCY is based on actual or imminent substantial core damage or melting with potential for loss of primary containment.

REFERENCES

NUREG-0654: Appendix 1, SITE AREA EMERGENCY, Step 9.

CLASSIFICATION

EAL: 3.4.1

GENERAL EMERGENCY

TEXT

Failure of the Reactor Protection System (RPS) or alternate rod insertion or SLC to bring the reactor subcritical which could result in a core meltdown with subsequent containment failure likely.

APPLICABILITY

Reactor critical.

EXAMPLE

All methods to shut down the reactor fail.

MEMO

Subcritical is defined as all but one rod full-in, all rods inserted to or beyond Position 02, OR a qualified Reactor Engineer has determined reactor will remain subcritical under all conditions without boron injection or cold shutdown boron per EOPs cannot be injected. All methods to shut down the reactor have failed. If heat sink is lost fuel will eventually be degraded or melt. Loss of heat sink will also degrade the Primary Containment integrity.

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY of evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.06A

CLASSIFICATION

EAL: 3.4.2

GENERAL EMERGENCY

TEXT

Other plant conditions exist, from whatever source, which make a release of large amounts of radioactivity in a short time period possible (e.g., any core melt situation).

APPLICABILITY

ALL

EXAMPLE

Event in progress or which has occurred, that involves actual or imminent substantial core degradation or melting with the potential for the loss of Primary Containment integrity.

MEMO

Attempt to classify under more specific EALs. If none apply and the potential for large releases or core melt exists, declare.

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY of evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.04

NUREG-0654: G.06

CLASSIFICATION

EAL: 4.1.1

NOUE

TEXT

Loss of ALL offsite power sources to vital busses "F" and "G" for > 15 minutes.

APPLICABILITY

ALL

EXAMPLE

Tornado drops all lines feeding the plant. Diesel generators start and load properly.

MEMO

None.

REFERENCES

NUREG-0654: N.07

CLASSIFICATION

EAL: 4.1.2

NOUE

TEXT

Unplanned loss of most or all safety system annunciators.

APPLICABILITY

Reactor critical.

EXAMPLE

Complete failure of all annunciators while at power.

MEMO

If a transient is also in progress, see EAL: 4.2.3.

REFERENCES

NUREG-0654: A.14

CLASSIFICATION

EAL: 4.2.1

ALERT

TEXT

Loss of all AC power (on and offsite sources) to vital Busses "F" and "G" during MODE 4 or 5.

APPLICABILITY

MODE 4 or 5.

EXAMPLE

Loss of all offsite AC power while in MODE 4 or 5. DGs fail to start.

MEMO

Being in MODE 4 or 5, reduces the risk for core damage or other fission product barrier challenge caused by the loss of power.

See EAL: 4.3.1 for loss of power when the reactor is hot.

REFERENCES

NUREG-0654: A.07

CLASSIFICATION

EAL: 4.2.2

ALERT

TEXT

Loss of all DC power sources resulting in loss of all ECCS capability for < 15 minutes.

APPLICABILITY

ALL

EXAMPLE

Loss of all DC buses for 5 minutes.

MEMO

The initiating condition for extended loss of DC references "vital" DC. CNS interprets this to refer to 125 and 250 VDC, as only these DC sources power and/or control ECCS Systems.

See EAL: 4.3.2 for extended loss.

REFERENCES

NUREG-0654: A.08

CLASSIFICATION

EAL: 4.2.3

ALERT

TEXT

Unplanned loss of most or all safety system annunciators with a transient in progress.

APPLICABILITY

Reactor critical.

EXAMPLE

Complete failure of all safety system annunciators while at power and a transient is in progress.

MEMO

Similar to EAL: 4.1.2 except this EAL includes a transient in progress.

The USAR definition of "transient" is an abnormal operational transient includes the events following a single equipment malfunction or a single operator error that is reasonable expected during the course of planned operations. Power failures, pump trips, and rod withdrawal errors are typical of the single malfunctions or errors initiating the events in this category.

Loss of all annunciators in the Control Room would also likely be classifiable under an EAL for loss of DC.

REFERENCES

NUMARC/NESP-007: SA4

CLASSIFICATION

EAL: 4.3.1

SITE AREA EMERGENCY

TEXT

Loss of all AC power (on and offsite sources) for more than 15 minutes with the Reactor in MODE 1, 2, or 3.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

Tornado drops all lines feeding the plant while at power. Both diesel generators fail to start and cannot be started within 15 minutes (i.e., Station Blackout > 15 minutes).

MEMO

Either RCIC or HPCI, are capable of injecting water to the vessel independent of AC power. Loss of all other means to inject water to the vessel for an extended period of time meets the class description for SITE AREA EMERGENCY listed in NUREG-0654.

REFERENCES

NUREG-0654: S.06

CLASSIFICATION

EAL: 4.3.2

SITE AREA EMERGENCY

TEXT

Loss of all DC power sources required for ECCS operation for more than 15 minutes.

APPLICABILITY

ALL

EXAMPLE

Loss of all DC buses for 25 minutes.

MEMO

Loss of various DC sources not only causes loss of DC powered equipment, but also the loss of indicators and/or controls for steam driven pumps. AC from inverters could also be lost.

REFERENCES

NUREG-0654: S.07

CLASSIFICATION

EAL: 4.3.3

SITE AREA EMERGENCY

TEXT

Inability to monitor a significant transient in progress.

APPLICABILITY

ALL

EXAMPLE

Complete failure of all annunciators while at power, a significant transient in progress, and inability to monitor key parameters via other instrumentation.

MEMO

Similar to EAL: 4.2.3 except this EAL includes the inability to monitor the transient using redundant instrumentation.

A significant transient includes responses to automatic or manually initiated functions, such as; scrams, runbacks involving > 25% thermal power changes, ECCS injections, or thermal power oscillations of 10% or greater.

REFERENCES

NUMARC/NESP-007: SS6

CLASSIFICATION

EAL: 4.4.1

GENERAL EMERGENCY

TEXT

Total loss of all AC power (on and offsite sources) with the inability to keep the core covered.

APPLICABILITY

ALL

EXAMPLE

HPCI and RCIC fail during a station blackout. Level drops below 0" (FZ).

MEMO

Failure to keep the core covered combined with a loss of all AC indicates failure of steam driven pumps. Without cooling the core will degrade, Primary Containment could heat up and potentially fail.

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY of evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.06A

CLASSIFICATION

EAL: 5.1.1

NOUE

TEXT

Any fire within the Protected Area which takes longer than 10 minutes to extinguish.

APPLICABILITY

ALL

EXAMPLE

Fire brigade is unable to extinguish a fire in the turbine lube oil reservoir room within 10 minutes from receipt of report or alarm in the Control Room.

MEMO

Time is measured from the time the report or alarm of a fire is received in the Control Room.

REFERENCES

NUREG-0654: N.10

Meacham to ERO, "Clarification of Certain Emergency Action Levels (EALs)",
CNSS900421 August 7, 1990.

Telecon Krumland/Hayden to Spitzberg (NRC IV), "EAL Interim Guidance - Memo",
August 22, 1990.

CLASSIFICATION

EAL: 5.1.2

NOUE

TEXT

Report or detection of toxic or flammable gases that could enter the Protected Area in amounts that will affect the health of plant personnel or can effect normal operation of the plant.

APPLICABILITY

ALL

EXAMPLE

Bulk hydrogen delivery truck regulator fitting is broken during unloading and cannot be isolated.

MEMO

Certain spills or releases may require notification of EPA or other agencies.

REFERENCES

NUREG-0654: N.14D

CLASSIFICATION

EAL: 5.2.1

ALERT

TEXT

A fire with a potential to cause degradation of a plant safety system required to be OPERABLE.

APPLICABILITY

ALL

EXAMPLE

A fire in NE Reactor Building 903' during Power operations with the potential to damage cables.

MEMO

This EAL is intended to apply to a fire which could directly affect any (one or more) plant safety system(s). Implicit in this interpretation is that plant conditions are such that the potentially affected safety system should be OPERABLE. For example, during MODE 4 or 5, HPCI is not required to be OPERABLE. Therefore, a fire in the HPCI Room would not necessarily threaten a required safety system. A large fire in the same area, however, that constituted a threat to the "B" and "D" RHR Pumps would meet the threshold for this EAL.

The threshold of the EAL would also be met if, while at power, a fire occurred in the HPCI Room which threatened the OPERABILITY of the system. This is true even if HPCI was inoperable at the time (under the required Technical Specification LCO), since HPCI should be OPERABLE while at power.

On the other hand, a small fire (e.g., a smoldering rag or burning piece of paper), which does not constitute a threat to a safety system, does not meet the intent of this EAL.

REFERENCES

NUREG-0654: A.13

Meacham to ERO, "Clarification of Certain Emergency Action Levels (EALs)", CNSS900421, August 7, 1990.

CLASSIFICATION

EAL: 5.2.2

ALERT

TEXT

Report or detection of toxic or flammable gases within a Vital Area in concentrations that will be life threatening to plant personnel or will affect the safe operation of the plant.

APPLICABILITY

ALL

EXAMPLE

CO₂ pre-discharge alarm on DG Room #1 received. Personnel evacuate room out different doors. Upon exit, all personnel cannot be accounted for.

MEMO

To meet the class description for an ALERT, the condition must indicate an actual or potential substantial degradation of the level of safety of the plant (NUREG-0654, Appendix 1) or be life threatening to personnel.

If personnel are not in the affected area nor required to enter, or must remain in the affected area but have adequate protection (to safely operate or shutdown the plant), this EAL is not met.

REFERENCES

NUREG-0654: A.18D

CLASSIFICATION

EAL: 5.3.1

SITE AREA EMERGENCY

TEXT

Fire compromising the functions of safety systems.

APPLICABILITY

ALL

EXAMPLE

A fire in the Cable Spreading Room affecting the function of HPCI while required to be OPERABLE.

MEMO

This EAL applies to a fire which compromises the active function (e.g., low pressure injection or automatic depressurization) of a safety system or multiple safety systems.

In reviewing EAL: 5.2.1 and 5.3.1, it is important to note that EAL: 5.2.1 covers the potential for degradation of nuclear safety, while EAL: 5.3.1 is recognition that an actual degradation has occurred. Additionally, the statements made regarding system OPERABILITY for EAL: 5.2.1 also apply to EAL: 5.3.1.

This EAL is intended to apply to a fire which could directly affect any (one or more) plant safety system(s). Implicit in this interpretation is that plant conditions are such that the potentially affected safety system should be OPERABLE. For example, during MODE 4 or 5, HPCI is not required to be OPERABLE. Therefore, a fire in the HPCI Room would not necessarily threaten a required safety system. A large fire in the same area, however, that constituted a threat to the "B" and "D" RHR pumps would meet the threshold for this EAL.

REFERENCES

NUREG-0654: S.11

Meacham to ERO, "Clarification of Certain Emergency Action Levels (EALs)", CNSS900421, August 7, 1990.

CLASSIFICATION

EAL: 5.4.1

GENERAL EMERGENCY

TEXT

Any major internal or external fire substantially beyond the design basis which could cause massive common damage to plant systems.

APPLICABILITY

ALL

EXAMPLE

A fire in Critical Switchgear Rooms, where both rooms are involved, result in loss of CS, RHR, SW, etc.

MEMO

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY is evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.07

CLASSIFICATION

EAL: 6.1.1

NOUE

TEXT

Security threat, attempted entry, or attempted sabotage.

APPLICABILITY

ALL

EXAMPLE

A credible bomb threat.

MEMO

As determined by the Security Contingency Plan or procedures.

REFERENCES

NUREG-0654: N.12

CLASSIFICATION

EAL: 6.2.1

ALERT

TEXT

On-going security compromise.

APPLICABILITY

ALL

EXAMPLE

Armed intruders within the Protected Area.

MEMO

As determined by the Security Contingency Plan or procedures.

REFERENCES

NUREG-0654: A.16

CLASSIFICATION

EAL: 6.3.1

SITE AREA EMERGENCY

TEXT

Imminent loss of physical control of the station.

APPLICABILITY

ALL

EXAMPLE

Large number of armed intruders in the station.

MEMO

None.

REFERENCES

NUREG-0654: S.14

CLASSIFICATION

EAL: 6.4.1

GENERAL EMERGENCY

TEXT

Loss of physical control of the station.

APPLICABILITY

ALL

EXAMPLE

Armed intruder(s) in the Control Room.

MEMO

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY is evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone go remain indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.03

CLASSIFICATION

EAL: 7.1.1

NOUE

TEXT

Ground motion > 0.01g as indicated by Control Room seismic monitoring panel.

APPLICABILITY

ALL

EXAMPLE

Minor tremor.

MEMO

Attempt to rule out "false" causes for alarm (i.e., heavy equipment operation).

REFERENCES

NUREG-0654: N.13A

CLASSIFICATION

EAL: 7.1.2

NOUE

TEXT

River level > 899' or < 867'.

APPLICABILITY

ALL

EXAMPLE

Flood, river level 900' MSL.

MEMO

Flood of record per USAR is 900.8'.

REFERENCES

NUREG-0654: N.13B

CLASSIFICATION

EAL: 7.1.3

NOUE

TEXT

Tornado touching down within the Owner Controlled Area.

APPLICABILITY

ALL

EXAMPLE

Tornado striking north Training Building.

MEMO

Consider performing assembly and accountability after danger has passed. If tornado touches down within the Protected Area, see EAL: 7.2.3.

REFERENCES

NUREG-0654: N.13C

CLASSIFICATION

EAL: 7.1.4

NOUE

TEXT

Sustained wind speed > 74 mph.

APPLICABILITY

ALL

EXAMPLE

Severe sustained winds from a thunderstorm. MET indicates sustained winds of 80 mph.

MEMO

CNS' version of "hurricane" listed in NUREG-0654 initiating condition.

These are sustained winds, not gusts.

REFERENCES

NUREG-0654: N.13D

CLASSIFICATION

EAL: 7.2.1

ALERT

TEXT

Ground motion > 0.1g as indicated by Control Room seismic monitoring panel.

APPLICABILITY

ALL

EXAMPLE

Earthquake.

MEMO

This EAL is the Operating Basis Earthquake (OBE) for CNS per the USAR.

Check the plant for damage. If major damage is evident, see EAL: 7.3.1.

REFERENCES

NUREG-0654: A.17A

CLASSIFICATION

EAL: 7.2.2

ALERT

TEXT

River level > 902' or < 865'.

APPLICABILITY

ALL

EXAMPLE

Ice jam upstream causes river level to drop below 865'.

MEMO

These levels equate to "near design levels" specified in NUREG-0654 initiating condition. This could result in "potential substantial degradation" to safety systems as found in the ALERT class description of NUREG-0654.

REFERENCES

NUREG-0654: A.17B

CLASSIFICATION

EAL: 7.2.3

ALERT

TEXT

Tornado touching down within the Protected Area.

APPLICABILITY

ALL

EXAMPLE

Tornado striking Security, Craft Change, and the NRC/Ambulance Buildings.

MEMO

Ensure tornado has passed before conducting assembly and accountability.

REFERENCES

NUREG-0654: A.17C

CLASSIFICATION

EAL: 7.2.4

ALERT

TEXT

Sustained wind speed > 95 mph.

APPLICABILITY

ALL

EXAMPLE

MET indicates sustained winds of 96 mph.

MEMO

Equates to "hurricane winds beyond design basis level" specified in NUREG-0654 initiating condition.

These are sustained winds, not gusts.

REFERENCES

NUREG-0654: A.17D

CLASSIFICATION

EAL: 7.3.1

SITE AREA EMERGENCY

TEXT

Ground motion > 0.1g as indicated on the Control Room seismic monitoring panel AND reports of major plant damage.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

Visible crack on Drywell following an earthquake.

MEMO

This EAL represents the Safe Shutdown Earthquake (SSE) from the USAR. The SSE for CNS is 0.2g. CNS has no active instrumentation beyond 0.1g. The SSE level will be assumed to have been reached if the 0.1g annunciator is received combined with reports of major plant damage, until the seismic monitor tapes have been read. The seismic monitor tapes will record up to 1.0G. See Procedure 4.12.

Obtain a hard copy of the event data from seismic instrumentation tapes per Procedure 4.1.2. The seismic tapes will read up to 1G.

Peak acceleration recorders (scratch pens) should be retrieved for analysis.

REFERENCES

NUREG-0654: S.15A

CLASSIFICATION

EAL: 7.3.2

SITE AREA EMERGENCY

TEXT

Sustained wind speed > 100 mph.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

Sustained MET indicates wind speed of 100 mph.

MEMO

This is a sustained wind speed, not gusts.

CNS instrumentation only goes to 100 mph, not beyond.

REFERENCES

NUREG-0654: S.15C

CLASSIFICATION

EAL: 7.3.3

SITE AREA EMERGENCY

TEXT

Flood which renders multiple ECCS Systems inoperable when they are required to be OPERABLE.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

HPCI quad flooded (affecting HPCI and RHR function).

MEMO

The SITE AREA EMERGENCY class description refers to plant functions needed to protect the public. If systems were impacted, but not needed, CNS would maintain the ALERT.

REFERENCES

NUREG-0654: S.15B

CLASSIFICATION

EAL: 7.3.4

SITE AREA EMERGENCY

TEXT

Low river level which results in complete loss of the Service Water System.

APPLICABILITY

All

EXAMPLE

SWPs cavitate due to low river level.

MEMO

Service water is always needed as the ultimate heat sink for the plant. Its loss meets the class description for SITE AREA EMERGENCY found in NUREG-0654.

Follow the procedures for maximizing water level in E Bay. This EAL is complete loss. Service Water operation which does not meet Tech Specs, but provides some cooling should be classified as an ALERT on EAL: 7.2.2.

REFERENCES

NUREG-0654: S.15B

CLASSIFICATION

EAL: 7.4.1

GENERAL EMERGENCY

TEXT

Any major natural phenomenon substantially beyond the design basis which could cause massive common damage to plant systems.

APPLICABILITY

ALL

EXAMPLE

Earthquake which causes immediate, massive, and obvious damage to many plant systems.

MEMO

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY is evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.07

CLASSIFICATION

EAL: 8.1.1

NOUE

TEXT

Aircraft crash within the Protected Area.

APPLICABILITY

ALL

EXAMPLE

Small aircraft crashes within the Protected Area, but does not strike any structures.

MEMO

An airplane crash must be within the Protected Area to meet the NOUE classification description of NUREG-0654.

REFERENCES

NUREG-0654: N.14A

CLASSIFICATION

EAL: 8.1.2

NOUE

TEXT

Explosion within the Protected Area.

APPLICABILITY

ALL

EXAMPLE

Gasoline storage tank explodes.

MEMO

An explosion includes all sudden, violent, and rapid releases of energy. "Detonation" and "Degradation" are releases of chemical energy which qualify as "Explosions". Also included is the rapid release of mechanical energy, i.e., pressure.

The source or location of the explosion must be within the Protected Area to meet the NOUE class description of NUREG-0654. An explosion on the Owner Controlled Area (OCA) does not meet the NOUE class description of NUREG-0654.

The rapid release of mechanical energy may result in the generation of a missile (see EAL: 8.2.2).

REFERENCES

NUREG-0654: N.14C

CLASSIFICATION

EAL: 8.1.3

NOUE

TEXT

Failure of a turbine rotating component causing an automatic reactor scram with release of radioactivity to the Turbine Building or which potentially affects safety systems.

APPLICABILITY

ALL

EXAMPLE

Low pressure rotor fails. Radioactivity is released to the Turbine Building prior to MSIV closure.

MEMO

A reactor scram (from whatever cause) does not meet the **NOUE** class description unless there is an associated release of radioactivity or safety systems are potentially affected.

If the radiological release is considered to be serious or safety systems are actually degraded, see EAL: 8.2.4.

REFERENCES

NUREG-0654: N.14E

CLASSIFICATION

EAL: 8.1.4

NOUE

TEXT

Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Unusual Event.

APPLICABILITY

ALL

EXAMPLE

Event in progress or which has occurred, that indicate a potential degradation of the level of safety of the station. The event may progress to a more severe emergency classification if it is not mitigated.

MEMO

For events of minor safety significance, but which warrant notification of authorities. Attempt to classify under more specific EALs. If none apply, declare under this one.

REFERENCES

NUREG-0654: N.15

CLASSIFICATION

EAL: 8.2.1

ALERT

TEXT

Aircraft striking structures within the Protected Area.

APPLICABILITY

ALL

EXAMPLE

Aircraft striking the Elevated Release Point (ERP).

MEMO

None.

REFERENCES

NUREG-0654: A.18A

CLASSIFICATION

EAL: 8.2.2

ALERT

TEXT

Missile impact, from whatever source, within the Protected Area.

APPLICABILITY

ALL

EXAMPLE

Helicopter drops unknown objects onto the Turbine Building roof.

MEMO

"Missile" is not defined by NUREG-0654. It is assumed that any large projectile is a missile.

REFERENCES

NUREG-0654: A.18B

CLASSIFICATION

EAL: 8.2.3

ALERT

TEXT

Known explosion damage to the facility affecting plant operation.

APPLICABILITY

ALL

EXAMPLE

Hydrogen explosion in hydrogen seal oil pump (Iron Horse) room causing turbine trip.

MEMO

An explosion includes all sudden, violent, and rapid releases of energy. "Detonation" and "Degradation" are releases of chemical energy which qualify as "Explosions". Also included is the rapid release of mechanical energy, i.e., pressure.

The rapid release of mechanical energy may result in the generation of a missile (see EAL: 8.2.2).

An explosion affecting operation could also have caused damage not yet discovered which could be of safety significance.

REFERENCES

NUREG-0654: A.18C

CLASSIFICATION

EAL: 8.2.4

ALERT

TEXT

Turbine failure causing casing penetration which creates serious radiological concerns or damages plant safety systems.

APPLICABILITY

ALL

EXAMPLE

Portion of the turbine rotor penetrates casing. Other failures result in serious radiological concerns.

MEMO

Extension of EAL: 8.1.4. Turbine casing penetration alone does not meet the ALERT class description of NUREG-0654.

Serious radiological concerns would also likely be classifiable under other EALs.

REFERENCES

NUREG-0654: A.18E

CLASSIFICATION

EAL: 8.2.5

ALERT

TEXT

Other conditions existing which in the judgement of the Emergency Director warrant declaration of an ALERT.

APPLICABILITY

ALL

EXAMPLE

An event in progress, or which has occurred, that involved an actual or potentially substantial degradation of the safety level of the station. Minor releases of radioactivity may occur or may have occurred.

MEMO

Attempt to classify under other more specific EALs. If none apply, declare on this one.

REFERENCES

NUREG-0654: A.19

CLASSIFICATION

EAL: 8.3.1

SITE AREA EMERGENCY

TEXT

Aircraft crash affecting vital areas with the plant in MODE 1, 2, or 3.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

Airplane crash into 1001' (Reactor Building 5th floor) while at power.

MEMO

None.

REFERENCES

NUREG-0654: S.16A

CLASSIFICATION

EAL: 8.3.2

SITE AREA EMERGENCY

TEXT

Missile or explosion damage to safe shutdown equipment with the plant in MODE 1, 2, or 3.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

A high pressure nitrogen cylinder is dropped and its valve assembly is sheared off, it becomes a "missile" damaging several HCUs.

MEMO

An explosion includes all sudden, violent, and rapid releases of energy. "Detonation" and "Degradation" are releases of chemical energy which qualify as "Explosions". Also included is the rapid release of mechanical energy, i.e., pressure.

The rapid release of mechanical energy may result in the generation of a missile (see EAL: 8.2.2).

REFERENCES

NUREG-0654: S.16B

CLASSIFICATION

EAL: 8.3.3

SITE AREA EMERGENCY

TEXT

Other conditions existing which in the judgement of the Emergency Director warrant declaration of a SITE AREA EMERGENCY.

APPLICABILITY

ALL

EXAMPLE

Events in progress or have occurred, which involve actual or potential major failure of plant functions needed for the protection of the public.

MEMO

Attempt to classify under other more specific EALs. If none apply and there is actual or likely major failures of plant equipment needed for the protection of the public, declare on this one.

REFERENCES

NUREG-0654: S.17

CLASSIFICATION

EAL: 8.4.1

GENERAL EMERGENCY

TEXT

Other conditions existing which in the judgement of the Emergency Director warrant declaration of a General Emergency (i.e., any core melt situation).

APPLICABILITY

ALL

EXAMPLE

Event in progress or which has occurred, that involves actual or imminent substantial core degradation or melting with a potential for the loss of Primary Containment integrity.

MEMO

Attempt to classify on other more specific EALs. If none apply and there is the possibility of release of large quantities of radioactive material in a short period of time, declare under this one.

Automatic MINIMUM Protective Action Recommendation (PAR) at a GENERAL EMERGENCY is evacuation for 2 mile radius and 5 miles downwind in at least 3 sectors, the remainder of 10 mile Emergency Planning Zone should go indoors and monitor EAS/EBS.

REFERENCES

NUREG-0654: G.07

BARRIER	POTENTIAL LOSS (1)	LOSS (2)
Fuel Cladding	<ol style="list-style-type: none"> 1500 mrem/hr on SJAE monitor (RM-150A,B) [EAL: 2.1.1]. Main steam line radiation monitor \geq 1200 mrem/hr. Drywell Radiation Monitor $>$ 250 REM/hr only valid under LOCA conditions. Coolant sample activity $>$ 4.0 μCi/gm DOSE EQUIVALENT I-131 [EAL: 2.1.2]. 	<ol style="list-style-type: none"> 15,000 mrem/hr on SJAE monitor (RM-150A,B). Reactor Coolant sample $>$ 300 μCi/gm DOSE EQUIVALENT I-131. Drywell Radiation Monitor $>$ 2500 REM/hr only valid under LOCA conditions. Reactor water level below 0" (FZ).
Primary Coolant Boundary	<ol style="list-style-type: none"> Operational RCS pressure boundary LEAKAGE; or unidentified LEAKAGE exceeds 5 gpm; or total LEAKAGE exceeds 30 gpm averaged over a previous 24 hour period; or unidentified LEAKAGE increase of more than 2 gpm within the previous 24 hour period in MODE 1. 	<ol style="list-style-type: none"> Reactor water cannot be maintained above 0" (FZ). Drywell pressure $>$ 2 psig with Primary Containment cooling operating. Primary coolant leak $>$ 50 gpm. Safety or Relief valve stuck open after mechanical lift.
Primary Containment OPERABILITY	<ol style="list-style-type: none"> Primary Containment pressure $>$ 25 psig and increasing. Loss of all cooling capabilities. Hydrogen concentration $>$ 4%. Unexplained drop in Drywell pressure or rise in nitrogen makeup. 	<ol style="list-style-type: none"> Inability to isolate primary containment. Loss of Primary Containment structural integrity. Drywell pressure \geq 56 psig. Hydrogen concentration $>$ 15%.

(1) Applies to classification only when combined with two actual losses, or if a separate EAL is indicated by a bracketed [] EAL #.

(2) Single fission product barrier loss (Fuel Cladding or Primary Coolant Boundary) is an ALERT, loss of two barriers (any two) is a SITE AREA EMERGENCY, loss of two barriers with potential for loss of the third barrier is a GENERAL EMERGENCY.

NOTE 1 - An emergency class may be declared on a potential loss or on an actual loss, but equating multiple potential losses to an actual loss is not acceptable. That is, two potential losses do not equal one actual loss. Only when a potential loss is combined with the actual loss of two barriers does the potential loss of the barrier change an emergency classification (i.e., from a SITE AREA EMERGENCY to a GENERAL EMERGENCY).

NOTE 2 - Paragraph numbers below correspond to those in the table on the previous page.

FUEL CLADDING - POTENTIAL LOSS

1. The number for SJAE (1500 mrem/hr) is obtained by calculating backwards through Attachment 1 of Procedure 5.7.16 assuming a combined SJAE flow of 100 cfm.

It should be noted that 1500 mrem/hr at the SJAE is very unlikely and could occur only with a failure to isolate main steam. Therefore, an indication of fuel damage will likely be seen first by MSL radiation monitors.

2. The main steam line monitor value (1200 mrem/hr) is an approximation of the lowest setpoint for the 3 x NORMAL 100% power alarm. This setpoint (according to I&C Calibration Procedure) is calculated such that the alarm point would be reached by the fission products released by a design basis rod drop accident.
3. Derived from Attachment 7 of Procedure 5.7.17. This attachment in turn comes from NEDO 22215. This value (250 REM/hr) approximates 0.1% fuel cladding failure. At this level, the "core degraded?" question in the dose assessment models will be answered NO.
4. From NUREG-0654 Initiating Condition Appendix 1, Notification of Unusual Event, Step 3.b, Required Reactor Water Coolant Analysis.

FUEL CLADDING - LOSS

1. The number for SJAE (15,000 mrem/hr) is obtained by calculating backwards through Attachment 1 of Procedure 5.7.16 assuming a combined SJAE flow of 100 cfm. This yields an approximate curie-content of 600,000 μ Ci/sec.

It should be noted that 15000 mrem/hr at the SJAE is very unlikely, and could occur only with a failure to isolate main steam. Therefore, an indication of fuel damage will likely be seen first by MSL radiation monitors.

2. From NUREG-0654, Initiating Condition Appendix 1, ALERT, Step 1.b, requires reactor water coolant analysis.
3. Derived from Attachment 7 of Procedure 5.7.17. This attachment in turn comes from NEDO-22215 and is only valid for LOCA conditions. This number (2500 rem/hr) approximates 1% fuel cladding failure. At this level, the "core degraded?" question in the dose assessment models will be answered YES.
4. Cladding integrity cannot be guaranteed if fuel is not covered with water. Note this EAL says below 0" (FZ). If level is intentionally lowered to 0" (FZ) (but not below) per EOPs, this EAL does not apply. If level falls below 0" (FZ) accidentally, even for a short time, this EAL does apply and the barrier shall be declared lost.

PRIMARY COOLANT BOUNDARY - POTENTIAL LOSS

1. Technical Specification leak rate limit.

PRIMARY COOLANT BOUNDARY - LOSS

1. If water level is inadvertently dropped below the top of fuel (as noted by Number 4 under FUEL CLADDING LOSS), then it shall be assumed that fuel cladding damage could have occurred, and the fission product boundary of cladding must be assumed lost. If, in addition, the water level cannot be returned and maintained above 0" (FZ), then the primary coolant boundary shall also be assumed to be lost. These two single fission product barriers lost equate to EAL: 2.3.2 (Known loss of Coolant Accident Greater Than Makeup Capacity) which is a SITE AREA EMERGENCY.
2. It does not take a large leak in the primary system to cause an increase in Drywell pressure. But, this is one of the first direct indicators available for the loss of the Primary Coolant Boundary fission product barrier.
3. From NUREG-0654, Initiating Condition, Appendix 1, ALERT, 5.
4. From NUREG-0654, Initiating Condition, Appendix 1, Notification of Unusual Event, 6.

PRIMARY CONTAINMENT - POTENTIAL LOSS

1. Represents a degrading trend representative of loss of control of some parameter affecting containment pressure. At this value (approximately half that of the loss value) the potential exists for loss.
2. Primary containment's design temperature is 281°F. Loss of all cooling capabilities may result in approaching this design limit.
3. Derived from NUREG/BR-0150, RTM-93 Table on page B-19. This is the beginning of the flammability region for a dry atmosphere.
4. Indicates a possible leak from primary containment.

PRIMARY CONTAINMENT - LOSS

1. From NUREG-0654, Initiating Condition Appendix 1, ALERT, 4.
2. Number 1 Loss indicator, above, refers to Primary Containment Isolation System (i.e., valves and associated logic). This indicator is intended to expand upon PCIS to include any indication that the containment's integrity is not intact. Also, valves other than PCIS may be used to isolate containment and restore the barrier.
3. 56 psig is the design pressure for containment. At or above this pressure, the containment is to be considered lost.
4. Derived from NUREG/BR-0150, RTM-93 Table on page B-19. This is the beginning of the detonation region for a dry atmosphere.

ISOLATION VALVE FAILURES

To help ensure consistent classification of fission product barrier loss due to failure of isolation valves, the following statements concerning isolation valve pairs apply:

1. Both valves in a line must fail.
2. The failing valves must fail to auto close on a group initiation signal.
3. The valves must also fail to close from the control switch in the Control Room. The timeliness of the Operator's recognition of the auto-close failure is not an issue in the determination of the barrier loss, that is, the barrier is not to be considered lost if the Operator has not yet tried to close the valves with the control switch.
4. If an Operator must leave the Control Room to close a valve, the barrier(s) shall be considered lost until a valve can be closed manually.
5. If the line penetrates PC and also communicates with the RPV, then two barriers are to be considered lost (EAL: 2.3.3 - SITE AREA EMERGENCY).
6. If either of the valves in a line are subsequently closed manually, then the barrier is to be considered restored and the emergency may be reclassified, as appropriate.
7. Valves other than PCIS may be used to isolate containment and restore the barrier.

A special case exists concerning SDV vent and drain valves when a scram occurs. When a scram occurs, these valves are supposed to close. While the scram inlet and outlet valves remain open (before the scram is reset) the water/steam isolated by these valves communicates directly to the reactor. The design fission product barriers (RPV and PC) have effectively "moved" from the scram valves to the vent and drain valves. If these valves fail, they therefore meet the criteria for loss of two of three fission product barriers (EAL: 2.3.3 - SITE AREA EMERGENCY).

A special case also exists concerning operation of HPCI and RCIC to support Emergency Operating Procedures (5.8 series). If HPCI or RCIC were to isolate on high temperature during operation to support the EOPs, the EOPs allow you to install jumpers to bypass the isolation and restart the system. This is allowed even if a leak from the steam supply is causing the high temperature condition. If a leak does in fact exist and the isolation valves are opened, this would constitute a loss of two fission product barriers (EAL: 2.3.3 - SITE AREA EMERGENCY). These barriers would be Reactor Coolant System and Primary Containment. The justification for the loss of the barriers is that you are releasing steam from the Reactor Coolant System to the atmosphere of the secondary containment. If the valves were reclosed, the fission product barriers would once again be considered intact.

Another issue was raised concerning the loss of a barrier due to local leak rate testing results. Local leak rate test results are not applicable to these EALs and valve position (i.e., can the valve be closed) will be the sole basis for declaring a barrier lost.

Information contained in Attachment 1, EAL Matrix, and Attachment 3, Fission Product Barriers-Indication of Loss Table, may be reformatted and placed on HARDCARDS similar to EOP Flowcharts. These EAL HARDCARDS will be controlled per this attachment. This information will be word for word but may be formatted differently using different font sizes or color backgrounds to assist the visual presentation.

Each EAL HARDCARD will be labeled with a EAL HARDCARD Revision data box that will list the latest revision and the date of the revision of the HARDCARD. This data will match the information below:

EAL HARDCARD Revision Data		
Procedure	HARDCARD Revision #	Date of last HARDCARD revision
EPIP 5.7.1, Attachment 5	Rev 0	4/17/00

It is not necessary that the HARDCARD revision number be revised with each revision of this procedure. However, if the HARDCARD is revised, or, if Attachment 1 or 3 are revised, then Attachment 5 must be revised to reflect the new EAL HARDCARD Revision Data with the new information.

EAL HARDCARD distribution will be made to following locations:

EAL HARDCARD Locations:

1. Control Room
2. Simulator
3. Emergency Operations Facility
4. Technical Support Center
5. Alternate Emergency Operations Facility
6. Emergency Preparedness Office

1. REFERENCES

1.1 TECHNICAL SPECIFICATION

1.1.1 Section 3.6, Containment Systems.

1.2 CODES AND STANDARDS

1.2.1 10CFR 50.72, Immediate Notification Requirements for Operating Nuclear Power Reactors.

1.2.2 NPPD Emergency Plan For CNS.

1.2.3 NUREG-0654, Revision 1, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

1.2.4 NUREG/BR-0150, Volume 1, Revision 3, November 1993, Response Technical Manual.

1.2.5 Environmental Protection Agency EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents, May 1992.

1.3 PROCEDURES

1.3.1 Instrumentation Operating Procedure 4.12, Seismic Instrumentation.

1.3.2 Emergency Plan Implementing Procedure 5.7.2, Shift Supervisor EPIP.

1.3.3 Emergency Plan Implementing Procedure 5.7.16, Release Rate Determination.

1.3.4 Emergency Plan Implementing Procedure 5.7.17, Dose Assessment.

1.4 MISCELLANEOUS

1.4.1 NRC Inspection Reports: 87-25, 88-29, 91-27, 92-14, and 93-24.

1.4.2 Letter CNSS900421 from Meacham to ERO, dated August 7, 1990, Clarification of Certain Emergency Action Levels (EALs).

- 1.4.3 Telecon Krumland/Hayden to Spitzberg (NRC IV), dated August 22, 1990, EAL Interim Guidance.
- 1.4.4 Telecon Hayden/Dean to Terc (NRC IV), dated April 22, 1992, Spent Fuel EAL 3.3.1.
- 1.4.5 Letter NSD940202 from G. R. Smith to G. R. Horn, Commitments from 1/31/94 Enforcement Conference.
- 1.4.6 Memorandum from Richard L. Emch, Jr., Acting Chief of Emergency Preparedness Branch, Division of Radiation Safety and Safeguards, Office of Nuclear Reactor Regulation, to James H. Joyner (Region 1), William E. Cline (Region 2), John A. Grobe (Region 3), and Blaine Murray (Region 4), dated July 11, 1994. Subject: Branch Position on Acceptable Deviations to Appendix 1 to NUREG-0654/FEMA-REP-1.
- 1.4.7 NEDC 00-099, Core dp vs. Flow Curve for Determination of Degraded Core.