



Nebraska Public Power District
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NLS2003124

December 11, 2003

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

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

The purpose of this letter is to transmit the following Emergency Plan Implementing Procedure (EPIP) pursuant to the requirements of 10 CFR 50, Appendix E, Section V, "Implementing Procedures":

EPIP 5.7.1 Revision 31 "Emergency Classification"

Should you have any questions concerning this matter, please contact me at 402-825-2774.

Sincerely,

Paul V. Flensing
Licensing and Regulatory Affairs Manager

/cb

Enclosure

cc: Regional Administrator w/enclosure (2)
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ATTACHMENT 3 LIST OF REGULATORY COMMITMENTS©

Correspondence Number: NLS2003124

The following table identifies those actions committed to by Nebraska Public Power District (NPPD) in this document. Any other actions discussed in the submittal represent intended or planned actions by NPPD. They are described for information only and are not regulatory commitments. Please notify the Licensing & Regulatory Affairs Manager at Cooper Nuclear Station of any questions regarding this document or any associated regulatory commitments.

COMMITMENT	COMMITTED DATE OR OUTAGE
None	

<p style="text-align: center;"><u>CNS OPERATIONS MANUAL</u> EPIP 5.7.1</p> <p style="text-align: center;">EMERGENCY CLASSIFICATION</p>	<p>USE: REFERENCE Ⓢ EFFECTIVE: 11/26/03 APPROVAL: SORC/IQA OWNER: R. J. FISCHER DEPARTMENT: EP</p>
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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 Manager shall:
 - ☐ 4.1.1 Compare the event to EALs in Attachments 1, 2, 3, and 4.

- ☐ 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 Manager'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 Manager 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 Manager 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 Manager 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 off-site 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 off-site 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 4) 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	<p>1.1.1 Uncontrolled AND unmonitored radiological release of liquid outside the Protected Area.</p> <p>1.1.2 Off-Site Dose Assessment Manual (ODAM) limits exceeded as indicated by either HIGH-HIGH alarm on a gaseous effluent radiological monitor; <u>OR</u> Combined Effluent Monitor indication on SPDS which cannot be cleared within 30 minutes.</p>	<p>1.2.1 Unplanned rise in area radiation levels within the Protected Area > 1000 times normal.</p> <p>1.2.2 Gaseous effluent radiological monitors indicate a release rate ten times the Off-Site Dose Assessment Manual (ODAM) limits, without indication of fuel cladding loss.</p>
Fission Product Barrier Threat or Loss	<p>2.1.1 Steam Jet Air Ejector radiation monitor reads > 1,500 mrem/hr; <u>OR</u> an increase of 300 mrem/hr within a 30 minute period.</p> <p>2.1.2 Coolant sample activity > 4.0 μCi/gm DOSE EQUIVALENT I-131.</p> <p>2.1.3 RCS operational LEAKAGE in excess of Technical Specification limits as indicated by: A. Any pressure boundary LEAKAGE; <u>OR</u> B. > 5 gpm unidentified LEAKAGE; <u>OR</u> C. > 30 gpm total LEAKAGE averaged over the previous 24 hour period; <u>OR</u> D. > 2 gpm increase in unidentified LEAKAGE within the previous 24 hour period in MODE 1.</p>	<p>2.2.1 Loss of fuel cladding or Primary Coolant Boundary fission product barriers (refer to Attachment 3 for indication).</p>
Operational	<p>3.1.1 Failure to meet COMPLETION TIME of a Technical Specification REQUIRED ACTION requiring a MODE change.</p>	<p>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.</p> <p>3.2.2 Evacuation of Control Room required or anticipated with control of shutdown systems established from local stations.</p> <p>3.2.3 Complete loss of capability to place or maintain the plant in MODE 4 or 5.</p> <p>3.2.4 Failure of Automatic <u>OR</u> Manual scram.</p>
Power or Alarms	<p>4.1.1 Loss of ALL off-site power sources to vital Buses "F" and "G" for > 15 minutes.</p> <p>4.1.2 Unplanned loss of most or all safety system annunciators.</p>	<p>4.2.1 Loss of all AC power (on and off-site sources) to vital Buses "F" and "G" during MODE 4 or 5.</p> <p>4.2.2 Loss of DC power sources resulting in loss of all ECCS capability for < 15 minutes.</p> <p>4.2.3 Unplanned loss of most or all safety system annunciators with a transient in progress.</p>
Fire Flammable Toxic	<p>5.1.1 Any fire within the Protected Area which takes longer than 10 minutes to extinguish.</p> <p>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 affect normal plant operation.</p>	<p>5.2.1 A fire with a potential to cause degradation of a plant safety system required to be OPERABLE.</p> <p>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.</p>
Security	<p>6.1.1 Security threat, attempted entry, or attempted sabotage.*</p>	<p>6.2.1 On-going security compromise as indicated by: A. Armed intruder(s) being inside the Protected Area boundary; <u>OR</u> B. An explosive device has been located within the Protected Area boundary; <u>OR</u> C. Security related explosion within the Protected Area boundary.</p>
Natural Phenomenon	<p>7.1.1 Ground motion > 0.01g as indicated by Control Room seismic monitoring panel.</p> <p>7.1.2 River level > 899' or < 867'.</p> <p>7.1.3 Tornado touching down within the Owner Controlled Area.</p> <p>7.1.4 Sustained wind speed > 74 mph.</p>	<p>7.2.1 Ground motion > 0.1g as indicated by Control Room seismic monitoring panel.</p> <p>7.2.2 River level > 902' or < 865'.</p> <p>7.2.3 Tornado touching down within the Protected Area.</p> <p>7.2.4 Sustained wind speed > 95 mph.</p>
Other Hazards	<p>8.1.1 Aircraft crash within the Protected Area.</p> <p>8.1.2 Explosion within the Protected Area.</p> <p>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.</p> <p>8.1.4 Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Usual Event.</p>	<p>8.2.1 Aircraft striking structures within the Protected Area.</p> <p>8.2.2 Missile impact, from whatever source, within the Protected Area.</p> <p>8.2.3 Known explosion damage to the facility affecting normal plant operation.</p> <p>8.2.4 Turbine failure causing casing penetration which creates serious radiological concerns or damages plant safety systems.</p> <p>8.2.5 Other conditions existing which in the judgement of the Emergency Director warrant declaration of an Alert.</p>

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 Significant core damage with a possible loss of coolable geometry as indicated by:</p> <p style="padding-left: 40px;">a 20% gap activity as determined by Chemistry.</p> <p style="padding-left: 40px;"><u>OR</u></p> <p style="padding-left: 40px;">Primary Containment radiation monitors read > 10,000 REM/hr.</p> <p>2.3.2 Known loss of coolant accident (LOCA) greater than all available 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 style="padding-left: 40px;">A. Fuel Cladding.</p> <p style="padding-left: 40px;">B. Primary Coolant Boundary.</p> <p style="padding-left: 40px;">C. Primary Containment.</p>	<p>2.4.1 Loss of any TWO of THREE fission product barriers <u>AND</u> 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 style="padding-left: 40px;">A. Fuel Cladding.</p> <p style="padding-left: 40px;">B. Primary Coolant Boundary.</p> <p style="padding-left: 40px;">C. Primary Containment.</p>
<p>3.3.1 Major damage to irradiated fuel <u>OR</u> 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 shutdown under all conditions without boron.</p>	<p>3.4.1 Failure of the Reactor Protection System (RPS) or alternate rod insertion or SLC to bring the reactor shutdown under all conditions 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 off-site sources) for more than 15 minutes with the Reactor in MODE 1, 2, or 3.</p> <p>4.3.2 Loss of 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 off-site 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 On-going security compromise in a plant Vital Area as indicated by:</p> <p style="padding-left: 40px;">A. Armed intruder(s) being inside a plant Vital Area; <u>OR</u></p> <p style="padding-left: 40px;">B. An explosive device has been located within a plant Vital Area; <u>OR</u></p> <p style="padding-left: 40px;">C. Security related explosion within a plant Vital Area.</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 <u>AND</u> reports of major plant damage.</p> <p>7.3.2 Sustained wind speed > 100 mph.</p> <p>7.3.3 Flooding from any source (External or Internal) 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 AND 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 off-site in an uncontrolled, unmonitored fashion, has the potential to exceed ODAM 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

Off-Site Dose Assessment Manual (ODAM) limits exceeded as indicated by either HIGH-HIGH alarm on a gaseous effluent radiological monitor OR Combined Effluent Monitor indication on SPDS which cannot be cleared within 30 minutes.

APPLICABILITY

ALL

EXAMPLE

Any one of the following annunciators/SPDS indications is received AND release is verified, but not brought below ODAM limits within 30 minutes:

- RX BLDG VENT HI-HI RAD.
- ERP DISCHARGE HI-HI RAD.
- TG BLDG VENT HI-HI RAD.
- RW/ARW VENT HI-HI RAD.
- MPF BLDG VENT HI-HI RAD.
- Combined Effluent Monitors on SPDS exceeding ODAM limit.

MEMO

Alarms should be validated prior to making classification. If any valid alarm cannot be cleared within 30 minutes, the EAL is met.

The Combined Effluent Monitor on SPDS is a sum of the fractions of the release rate/ODAM limit for the Reactor Building, Elevated Release Point, Turbine Building, and Rad Waste/Augmented Rad Waste Buildings. It is possible for it to be in alarm with no single point at the HI-HI alarm setpoint. The MPF is not calculated in the Combined Effluent Monitor display.

REFERENCES

NUREG-0654: N.02

CLASSIFICATION

EAL: 1.2.1

ALERTTEXT

Unplanned rise in area radiation levels within the Protected Area > 1000 times normal.

APPLICABILITY

ALL

EXAMPLE

Resin spill and RP survey indicates direct radiation has increased by > 1000 times.

MEMO

This condition specifically represents an unplanned rise in radiation levels within the Protected Area. Planned evolutions which cause elevated radiation levels do not warrant classification under this EAL. Examples of planned evolutions include radiography, lifting RPV moisture separator/dryer during refueling operations, and relocation of radioactive materials. The temporary increase in radiation levels should be part of the pre-job planning and briefing. Normal is based on previous readings or survey data.

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 Off-Site Dose Assessment Manual (ODAM) limits without indication of fuel cladding loss.

APPLICABILITY

ALL

EXAMPLE

NONE

MEMO

If there are any indications that the fuel cladding is not intact (fuel has been uncovered, SJAЕ monitors > 1.5 E+4 mrem/hr, PASS sample > 300 μCi/gm Dose Equivalent Iodine-131, 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

NONE

MEMO

NONE

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

| NONE

MEMO

| NONE

REFERENCES

NUREG-0654: S.13

ATTACHMENT 2 EMERGENCY ACTION LEVELS

CLASSIFICATION

EAL: 1.4.1

GENERAL EMERGENCY

TEXT

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

APPLICABILITY

ALL

EXAMPLE

| NONE

MEMO

| NONE

REFERENCES

NUREG-0654: G.01

CLASSIFICATION

EAL: 1.4.2

GENERAL EMERGENCY

TEXT

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

APPLICABILITY

ALL

EXAMPLE

| NONE

MEMO

| NONE

REFERENCES

NUREG-0654: G.01

CLASSIFICATION

EAL: 2.1.1

NOUE

TEXT

| Steam Jet Air Ejector radiation monitor reads > 1,500 mrem/hr

| OR

| an increase of 300 mrem/hr within a 30 minute period.

APPLICABILITY

ALL

EXAMPLE

| NONE

MEMO

| Greater than 1,500 mrem/hr on the Steam Jet Air Ejector radiation monitor also
| corresponds to a POTENTIAL LOSS of the fuel cladding; refer to Attachment 3.

REFERENCES

NUREG-0654: N.03A

CLASSIFICATION

EAL: 2.1.2

NOUE

TEXT

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

APPLICABILITY

ALL

EXAMPLE

NONE

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 $\mu\text{Ci/gm}$ dose equivalent I-131

CLASSIFICATION

EAL: 2.1.3

NOUE

TEXT

RCS operational LEAKAGE in excess of Technical Specification limits as indicated by:

- A. Any pressure boundary LEAKAGE; OR
- B. > 5 gpm unidentified LEAKAGE; OR
- C. > 30 gpm total LEAKAGE averaged over the previous 24 hour period; OR
- D. > 2 gpm increase in unidentified LEAKAGE within the previous 24 hour period in MODE 1.

APPLICABILITY

MODE 1, 2, or 3.

EXAMPLE

NONE

MEMO

Classification of this EAL should be consistent with Technical Specification determination. If the LCO is determined to NOT BE met, the EAL should be considered MET. Ability to meet the action statement should not be considered in classification. See LCO 3.4.4 for further discussion of the bases of these limits.

REFERENCES

NUREG-0654: N.05

CLASSIFICATION

EAL: 2.2.1

ALERT

TEXT

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

APPLICABILITY

Per Technical Specifications.

EXAMPLE

NONE

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).

REFERENCES[©]

NUREG-0654: A.01

NUREG-0654: A.04

NUREG-0654: A.05

NUREG-0654: A.09

NUREG-0654: N.06

ATTACHMENT 2 EMERGENCY ACTION LEVELS

CLASSIFICATION

EAL: 2.3.1

SITE AREA EMERGENCY

TEXT

| Significant core damage with a possible loss of coolable geometry as indicated by:
 \geq 20% gap activity as determined by Chemistry.

OR

| Primary Containment radiation monitors read $> 10,000$ REM/hr.

APPLICABILITY

ALL

EXAMPLE

| NONE

MEMO

| NONE

| REFERENCES^o

 NUREG-0654: S.02

CLASSIFICATION

EAL: 2.3.2

SITE AREA EMERGENCY

TEXT

| Known loss of coolant accident (LOCA) greater than all available makeup capacity.

APPLICABILITY

| ALL

EXAMPLE

| LOCA greater than RCIC capacity with HPCI unavailable and all means to
| depressurize fail.

MEMO

| This EAL is the combination of a LOCA with loss of Low Pressure ECCS OR LOCA
| greater than available HP Injection AND inability to depressurize the RPV.

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

NONE

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 EMERGENCY

TEXT

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

NONE

MEMO

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

| Failure to meet COMPLETION TIME of a Technical Specification REQUIRED
| ACTION requiring a MODE change.

APPLICABILITY

| MODE 1, 2, or 3.

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) requiring a MODE change. This constitutes
| a condition outside that analyzed by Technical Specifications. The NOUE may not be
| terminated until the required MODE is reached.

REFERENCES

NUREG-0654: N.08

NUREG-0654: N.09

NUREG-0654: N.15

ATTACHMENT 2 EMERGENCY ACTION LEVELS

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

| NONE

MEMO

| If more than 10 bundles are affected OR fuel is uncovered, refer to 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

MODE 3, 4, or 5 with irradiated fuel in the vessel.

EXAMPLE

RHR Shutdown Cooling Isolation valve fails to open due to thermal binding while attempting to enter MODE 4. Attempts to manually open the valve fail due to the thermal binding.

MEMO

If all means to place or maintain the reactor < 212°F fail, declare.

REFERENCES

NUREG-0654: A.10

CLASSIFICATION

EAL: 3.2.4

ALERT

TEXT

| Failure of Automatic OR Manual scram.

APPLICABILITY

| MODE 1 or 2.

EXAMPLE

| Turbine trip from 100% power with failure of RPS to automatically scram the reactor.
| The manual scram is successful.

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
| shutdown under all conditions without boron. If ARI also fails, see EAL 3.3.4.
| Shutdown under all conditions without boron is defined as all but one rod full-in or
| all rods inserted to or beyond Position 02, OR a qualified Reactor Engineer has
| determined reactor will remain shutdown under all conditions without boron
| injection.

| Applicability for this EAL refers to a scram initiated OR required from MODE 1 or 2.

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

| NONE

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 uncovering 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 3.2.2 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 shutdown under all conditions without boron.

APPLICABILITY

MODE 1 or 2.

EXAMPLE

Low reactor water level scram with hydraulic lock on all the north HCUs. Half the rods remain uninserted. Continued power generation.

MEMO

If any scram signal and initiation of ARI fails to bring the reactor shutdown under all conditions without boron, a SITE AREA EMERGENCY based on this EAL exists.

Shutdown under all conditions without boron 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 shutdown 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.

Applicability for this EAL refers to a scram initiated from MODES 1 and 2.

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 shutdown under all conditions which could result in a core meltdown with subsequent containment failure likely.

APPLICABILITY

MODE 1 or 2.

EXAMPLE

All methods to shut down the reactor fail.

MEMO

Shutdown under all conditions is defined as all but one rod full-in, OR all rods inserted to or beyond Position 02, OR a qualified Reactor Engineer has determined reactor will remain shutdown under all conditions without boron injection, OR cold shutdown boron per EOPs has been injected.

All methods to shut down the reactor must have failed. If heat sink is lost in this condition the fuel will eventually be degraded or melt. Loss of heat sink will also degrade the Primary Containment integrity.

Applicability for this EAL refers to a scram initiated from MODE 1 or 2.

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.

REFERENCES

NUREG-0654: G.04

NUREG-0654: G.06

CLASSIFICATION

EAL: 4.1.1

NOUE

TEXT

Loss of ALL off-site power sources to vital Buses "F" and "G" for > 15 minutes.

APPLICABILITY

ALL

EXAMPLE

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

Lightning strike results in loss of SSST with degraded voltage on the ESST (1FS/1GS autoclosure not permitted) for > 15 minutes.

MEMO

The NSST should not be considered a source of off-site power.

The SSST must be supplied by T2 to be considered a source of off-site power.

REFERENCES

NUREG-0654: N.07

CLASSIFICATION

EAL: 4.1.2

NOUE

TEXT

Unplanned loss of most or all safety system annunciators.

APPLICABILITY

MODE 1 or 2.

EXAMPLE

Loss of ~ 75% of Control Room annunciators due to fault on RONAN System.

MEMO

For this EAL, the term "MOST" is defined as ~ 75%. An Unplanned Loss of > 75% of all Main Control Room annunciators without a plant transient warrants a heightened awareness by Control Room Operators. Quantification of > 75% is left to the discretion of the SM and is considered ~ 75%. It is not intended that a detailed count be performed, but that a rough approximation be used to determine the severity of the loss.

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 off-site sources) to vital Buses "F" and "G" during MODE 4 or 5.

APPLICABILITY

MODE 4 or 5.

EXAMPLE

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

APPLICABILITY

ALL

EXAMPLE

Any loss of DC power that results in a complete loss of ECCS capability for < 15 minutes.

MEMO

If the loss of ALL ECCS capability is the result of a loss of DC power (either 125 VDC or 250 VDC; or a combination of the two), the EAL is met.

If the complete loss of ECCS capability as a result of the loss of DC power lasts ≥15 minutes, refer to EAL 4.3.2 (SAE).

| REFERENCES[®]

NUREG-0654: A.08

CLASSIFICATION

EAL: 4.2.3

ALERTTEXT

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

APPLICABILITY

MODE 1 or 2.

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.

For this EAL, the term "MOST" is defined as ~ 75%. Quantification of > 75% is left to the discretion of the SM and is considered ~ 75%. It is not intended that a detailed count be performed, but that a rough approximation be used to determine the severity of the loss.

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.

REFERENCES

NUMARC/NESP-007: SA4

CLASSIFICATION

EAL: 4.3.1

SITE AREA EMERGENCY

TEXT

Loss of all AC power (on and off-site 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 DC power sources required for ECCS operation for more than 15 minutes.

APPLICABILITY

ALL

EXAMPLE

Any loss of DC power that results in a complete loss of ECCS capability for
≥ 15 minutes.

MEMO

If the loss of ALL ECCS capability is the result of a loss of DC power (either 125 VDC
or 250 VDC; or a combination of the two) for ≥ 15 minutes, the EAL is met.

| 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 off-site 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.

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 affect normal plant operation.

APPLICABILITY

ALL

EXAMPLE

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

MEMO

Normal plant operation is defined as: Activities at the plant site associated with routine testing, maintenance, or equipment operations, in accordance with normal operating or administrative procedures. Entry into abnormal or emergency operating procedures, or deviation from normal security or radiological controls posture, is a departure from normal plant operations.

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 and an IDLH atmosphere is confirmed in the DG Room #1.

MEMO

IDLH atmospheres (for Toxic gases) OR 50% LEL (2% Hydrogen) in Vital Areas should be considered as meeting this condition.

If use of protective equipment (e.g., SCBAs) is required to access plant Vital Areas or the evacuation of personnel is required based on toxic/flammable gasses, consider this to be effecting safe plant operation.

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 EMERGENCYTEXT

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

NONE

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

A confirmed "Red, Site Specific, and credible" threat warning from the NRC should be considered a Security threat.®

Sabotage is deliberate damage, mis-alignment, or mis-operation of plant equipment with the intent to render the equipment inoperable. Equipment found tampered with or damaged due to malicious mischief may NOT meet the definition of sabotage until determination is made by Security Supervision.

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 as indicated by:

- A. Armed intruder(s) being inside the Protected Area boundary; OR
- B. An explosive device has been located within the Protected Area boundary; OR
- C. Security related explosion within the Protected Area boundary.

APPLICABILITY

ALL

EXAMPLE

Armed intruder(s) within the Protected Area.

MEMO

One or more individuals who are engaged in a determined assault, overtly, or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction are considered intruder(s).

REFERENCES

NUREG-0654: A.16

CLASSIFICATION

EAL: 6.3.1

SITE AREA EMERGENCY

TEXT

On-going security compromise in a plant Vital Area as indicated by:

- A. Armed intruder(s) being inside a plant Vital Area; OR
- B. An explosive device has been located within a plant Vital Area; OR
- C. Security related explosion within a plant Vital Area.

APPLICABILITY

ALL

EXAMPLE

NONE

MEMO

One or more individuals who are engaged in a determined assault, overtly, or by stealth and deception, equipped with suitable weapons capable of killing, maiming, or causing destruction are considered intruder(s).

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 or Alternate Shutdown Panel.

MEMO

Loss of either the Control Room or Alternate Shutdown Panel would be considered a loss of physical control of the station.®

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

Noticeable seismic shock felt in Control Room.

MEMO

If the Seismic Monitoring Panel (SMA-3) is not available and a noticeable seismic shock is felt, a seismic event > 0.1g is assumed to have occurred. Refer to EAL 7.2.1 or 7.3.1 if major plant damage has occurred.

Personnel on upper floors of buildings noticeably feel a 0.01g earthquake and see suspended objects swing. At 0.1g, some heavy furniture may move and personnel on upper floors may have difficulty standing.®

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

If the Seismic Monitoring Panel (SMA-3) is not available and a noticeable seismic shock is felt, a seismic event > 0.1g is assumed to have occurred. Refer to EAL 7.3.1 if major plant damage has occurred.

Personnel on upper floors of buildings noticeable feel a 0.01g earthquake and see suspended objects swing. At 0.1g, some heavy furniture may move and personnel on upper floors may have difficulty standing.®

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

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

If the Seismic Monitoring Panel (SMA-3) is not available and a noticeable seismic shock is felt, a seismic event > 0.1g is assumed to have occurred.

Personnel on upper floors of building noticeable feel a 0.01g earthquake and see suspended objects swing. At 0.1g, some heavy furniture may move and personnel on upper floors may have difficulty standing.

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. Whether equipment damage is considered "major plant damage" is based on the judgement of SS/ED. Equipment damage that places the plant in condition not addressed by Technical Specifications (e.g., T.S. LCO 3.0.3) should be considered major plant damage.

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

| Flooding from any source (External or Internal) 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) due to Fire Protection System
| break or high river level.

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

NONE

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 is rapid, violent, unconfined combustion, or catastrophic failure of
| pressurized equipment within the Protected Area Boundary and would be classified
| under this EAL.

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 normal plant operation.

APPLICABILITY

ALL

EXAMPLE

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

MEMO

| An explosion is rapid, violent, unconfined combustion, or catastrophic failure of
| pressurized equipment that imparts energy of sufficient force to potentially damage
| permanent structures, systems, or components.

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.

| Normal plant operation is defined as: Activities at the plant site associated with
| routine testing, maintenance, or equipment operations, in accordance with normal
| operating or administrative procedures. Entry into abnormal or emergency operating
| procedures, or deviation from normal security or radiological controls posture, is a
| departure from normal plant operations.

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 is rapid, violent, unconfined combustion, or catastrophic failure of pressurized equipment that imparts energy of sufficient force to potentially damage permanent structures, systems, or components.

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.

REFERENCES

NUREG-0654: G.07

ATTACHMENT 3 FISSION PRODUCT BARRIERS - INDICATIONS OF LOSS

BARRIER	POTENTIAL LOSS (1)	LOSS (2)
Fuel Cladding	<ol style="list-style-type: none"> 1,500 mrem/hr on SJAE monitor [EAL: 2.1.1]. Coolant sample activity > 4.0 μCi/gm DOSE EQUIVALENT I-131 [EAL: 2.1.2]. LOCA with DW radiation monitor reading > 250 REM/hr. 	<ol style="list-style-type: none"> 15,000 mrem/hr on SJAE monitor. Reactor Coolant sample > 300 μCi/gm DOSE EQUIVALENT I-131. LOCA with DW radiation monitor reading > 2,500 REM/hr. Non-LOCA with DW radiation monitor reading > 115 REM/hr. Reactor water level below 0" (FZ) or cannot be determined.® Main steam line radiation monitor \geq Hi-Hi alarm setpoint.®
Primary Coolant Boundary	<ol style="list-style-type: none"> RCS operational LEAKAGE in excess of Technical Specification limits as indicated by: <ol style="list-style-type: none"> Any pressure boundary LEAKAGE; OR > 5 gpm unidentified LEAKAGE; OR > 30 gpm total LEAKAGE averaged over the previous 24 hour period; OR > 2 gpm increase in unidentified LEAKAGE within the previous 24 hour period in MODE 1. 	<ol style="list-style-type: none"> Reactor water cannot be restored and maintained above 0" (FZ) or cannot be determined.® Drywell pressure > 2 psig due to RCS leakage.® Primary coolant leak > 50 gpm. Safety or Relief valve stuck open AND Suppression Pool Temperature \geq 110°F.®
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. Based on 0.1% cladding failure (NEDC 02-004).
2. Based on Technical Specification 3.4.6. See Technical Specification bases.
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 with a LOCA environment in the DW.

FUEL CLADDING - LOSS

1. Based on 1% cladding failure (NEDC 02-004).
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 valid for LOCA conditions. This number (2500 rem/hr) approximates 1% fuel cladding failure.
4. Based on 1% clad failure during Non-LOCA conditions in the DW. Refer to NEDC 02-009.
5. 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. If RPV level cannot be determined (unknown), the barrier shall be considered lost.®
6. Based on analysis for Design Bases Control Rod Drop Accident (DBCRDA). Fuel cladding failure resulting from DBCRDA will result in MSL Radiation Monitor Hi-Hi alarm setpoint being reached. Refer to Tech Spec Bases 3.3.6.1/2.d for MSL Radiation Monitor Hi-Hi alarm setpoint bases.®

PRIMARY COOLANT BOUNDARY - POTENTIAL LOSS

1. Technical Specification leak rate limit. Refer to Technical Specification 3.4.4.

PRIMARY COOLANT BOUNDARY - LOSS

1. If RPV water level cannot be restored and maintained above 0" (FZ), then the primary coolant boundary shall be assumed to be lost. If RPV water level cannot be determined (unknown), then the barrier shall be considered lost.®
2. Drywell pressure > 2 psig with corollary indications (DW temperature, humidity) should be considered a loss of Primary Coolant Boundary. Loss of Drywell cooling that results in > 2 psig should not be a loss of Primary Coolant Boundary (NOTE: Using ideal gas law, DW temperature would be ~ 202° at 2 psig and 242° at 3 psig if due to loss of cooling).®
3. From NUREG-0654, Initiating Condition, Appendix 1, ALERT, 5.
4. Technical Specifications require a SCRAM when Suppression Pool Average Temperature reaches 110°F. Below this point, the reactor is considered in a safe condition even with relief valves stuck open.

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^o

The following apply to determining fission product barrier loss in response to Primary Containment Isolation Valve (PCIV) failures:

NOTE - Both valves in a line must fail to be considered a loss of the barrier(s).

1. The barrier(s) should be considered lost if ANY of the following exist:
 - Attempted manual isolation from the Control Room failed.
 - Line remains un-isolated following a Group Isolation AND subsequent attempt to isolate from the Control Room is unsuccessful.
2. Valves other than PCIS may be used to isolate containment and restore the barrier.
3. 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.
4. 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).
5. 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.

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.

ATTACHMENT 4 EAL HARDCARDS

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 Number	Date Of Last HARDCARD Revision
EPIP 5.7.1, Attachment 4	Revision 4	11/24/03

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 4 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 Bases 3.3.6.1/2.d, Main Steam Line Radiation - High.

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

1.2.3 NPPD Emergency Plan For CNS.

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

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

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 DD 10154409, Clarify term "degraded core" for EAL 2.3.1.

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

- 1.4.3 Letter NSD940202 from G. R. Smith to G. R. Horn, Commitments from 1/31/94 Enforcement Conference.

- 1.4.4 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.

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

- 1.4.6 RCR 2001-0871, Action #2. Revised memo field of EAL 4.1.1 to discuss need to classify if power to both S/U and EMER XFMR is lost > 15 minutes.

- 1.4.7 RCR 2001-1272, Action #1.

- 1.4.8 RCR 2002-0448, Action #1, Clarify definition of "major equipment damage" in EAL 7.3.1.

- 1.4.9 RCR 2002-0559, Action #7, Revise the following EALs to remove subjective wording: 5.1.2, 5.2.2, 6.1.1, 6.2.1, 6.3.1, 8.2.3, 8.3.2.

- 1.4.10 RCR 2002-0660, Action #1, Clarify that the loss of DC power that results in a loss of ECCS injection capability is the intent of EALs 4.2.2 and 4.3.2.

- 1.4.11 RCR 2003-0051, Action #2, Clarify Expected Response to Loss of RPV Level Trend.

- 1.4.12 RCR 2003-1486, Action #2, Include protected symbol to reference to EALs changed in EPIP 5.7.1, Revisions 29 and 30 for TIP closure.

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

- 1.4.14 Telecon Hayden/Dean to Terc (NRC IV), dated April 22, 1992, Spent Fuel EAL 3.3.1.

- 1.4.15 © TIP Action Plan 5.2.2.1, Revision 2, Action Step #1, Revise Procedure 5.7.1 to clarify subjective wording in classification tables and information guides. Affects the entire procedure as all EALs were reviewed; however, specifically affects the following EAL #s in Attachment 2 (2.2.1, 2.3.1, 4.2.2, 4.3.2, 6.1.1, 6.4.1, 7.1.1, 7.2.1, 7.3.1) which were revised in Revisions 29 and 30, and also Attachment 3.
- 1.4.16 © SCR 2003-0356, Action #15, EPIP 5.7.1, Attachment 2, Core Plate Differential Pressure Versus Core Flow. Affects EAL 2.3.1.