ECG SECTIONS

SALEM ECG

SECTIONS 1 - 11
EMERGENCY ACTION LEVELS (EALs)
&
REPORTING ACTION LEVELS (RALs)

ECG SECTIONS

NOTE: THESE 11 SECTIONS WILL REPLACE THE 18 SECTIONS CURRENTLY IN THE ECG.

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SIGNATURE PAGE

Prepared By: _____ _____
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(If Applicable)

SORC Review and Station Approvals

_____ _____
Mtg. No. Salem Chairman General Manager - Salem Operations

_____ _____
Date Date

SALEM
EVENT CLASSIFICATION GUIDE
INTRODUCTION & USAGE
Section i

I. PURPOSE OF THE EVENT CLASSIFICATION GUIDE (ECG)

A. To provide a central reference document which enables the Senior Nuclear Shift Supervisor (SNSS) or the Emergency Coordinator (EC) to classify emergency or non-emergency events and conditions.

B. To provide the required procedures for immediate and prompt notifications and direction to other required written reports.

C. To direct the Emergency Coordinator to implement procedures which will ensure appropriate response as required by the classified emergency level.

II. EMERGENCY CLASSIFICATION DESCRIPTIONS

A. Emergency Classes:

1. The NRC/FEMA established four emergency classes for fixed nuclear facilities.

2. An emergency class is used for grouping off-normal nuclear power plant conditions according to their relative radiological seriousness and the time sensitive onsite and offsite actions needed to respond to such conditions.

3. The four emergency classes in ascending order are:

Unusual Event (UE)	Least Severe
Alert (A)	↑
Site Area Emergency (SAE)	↑
General Emergency (GE)	Most Severe

B. Unusual Event:

1. Plant events which are in progress or have occurred which indicate a potential degradation of the plant safety level.

2. The lowest level of emergency at the plant, which can usually be handled by the normal operating shift.

3. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs. Dose consequences would not exceed 5 mRem TEDE.

C. Alert:

1. Plant events which are in progress or have occurred that are more serious than an Unusual Event which involve an actual or potential substantial degradation of the plant safety level.

2. Emergency Response personnel are required in addition to the normal operating shift. The entire emergency response organization is called in. The TSC is activated, and the EOF and ENC are manned and may activate if needed for support.

3. Any release of radioactive material is expected to be limited to a small fraction of the EPA Protective Action Guideline exposure levels. Dose consequences not to exceed 100 mRem TEDE.

D. Site Area Emergency:

1. Serious plant events are in progress or have occurred which involve actual or likely major failure of plant functions required for protection of the public.

2. The entire emergency response organization is activated.

3. Any release of radioactive material is not expected to exceed EPA Protective Action Guideline exposure levels beyond the plant boundary. Dose consequences not to exceed 1000 mRem TEDE.

E. General Emergency:

1. Serious plant events are in progress or have occurred which involve actual or imminent core degradation or core melting with potential for loss of containment integrity.

2. The entire emergency response organization is activated.

3. Release of radioactive material can be expected to exceed

EPA Protective Action Guideline exposure levels of 1000 mRem TEDE offsite.

III. EVENT CLASSIFICATION GUIDE STRUCTURE

A. The ECG is divided into 3 segments which are:

1. ECG Front Matter: Information which include the Table of Contents, Introduction/Reference, and a Glossary of acronyms.

2. ECG Sections: Flow charts diagrams used to classify events/conditions as emergencies or non-emergencies.

3. ECG Attachments: Implementing documents that provide direction for emergency and non-emergency classification, notification, reporting requirements, references and forms required to facilitate event communications.

B. ECG Sections Format

With the exception of ECG Section 3, the ECG section flowcharts are comprised of the following segments:

1. Initiating Condition (IC): A generic nuclear power plant condition or event where either the potential exist for a radiological emergency OR non-emergency reportable event OR such an emergency OR non-emergency reportable event has occurred.

2. MODE: Refers to the Operating Mode at Salem during which a particular IC/EAL is applicable. The MODE that the plant was in when the event started, prior to any protective system or operator actions, should be utilized when classifying events.

3. EAL Number (EAL#): Each Emergency Action Level (EAL) has been assigned a unique numeric identifier called the EAL#. This EAL# is used in communication within PSE&G's Emergency Response Organization as well as when communicating with offsite officials who use an offsite reference manual which is indexed in accordance with the EAL#'s. Each digit of the EAL# has a specific meaning that is not important to the users but is important to the personnel who develop and maintain the ECGs. The digit and EAL# are defined below.

Sample EAL# = 9.4.1.a

First Digit = Identifies which section of the ECG that a particular EAL is contained in. In the example the Digit 9 identifies that the EAL is from Section 9, Hazards.

Second Digit= Identifies the subsection that the EAL is contained in. In the above example the Digit 4 identifies that the EAL is found in subsection 4 of Section 9 thus 9.4, Toxic Gases.

Third Digit = The third digit identifies the emergency class associated with that particular EAL as follows:

If 3rd Digit is a 1 THEN EAL results in UE
If 3rd Digit is a 2 THEN EAL results in A
If 3rd Digit is a 3 THEN EAL results in SAE
If 3rd Digit is a 4 THEN EAL results in GE

If looking at a RAL in Section 11 ONLY, the Third Digit identified the type of non-emergency event report to be made as follows.

If 3rd Digit is a 1 THEN RAL is 1hr report
If 3rd Digit is a 2 THEN RAL is 4hr report
If 3rd Digit is a 3 THEN RAL is 24hr report OR GREATER

Fourth Digit= If a fourth digit is used, it is always a lower case letter and delineate one of multiple events which lead to similar emergency or non-emergency class levels. In the above example the "a" delineate 1 of 2 EALs that result in an Unusual Event and fall under a common initiating condition.

4. Emergency Action Level (EAL) or Reporting Action level (RAL): A predetermined, site-specific, or observable threshold used to define a generic initiating condition that places the plant in a given emergency class or non-emergency report. An EAL/RAL can be an instrument reading, an equipment status indicator, a measurable parameter, a discrete observable event, analysis results, entry into specific EOPs, or another phenomenon which indicates the need for classification of an emergency or non-emergency.

5. Action Required: Identifies the specific emergency class or non-emergency report that is required and refer the user to a specific ECG Attachment for implementation direction for the emergency or non-emergency event declared.

C. ECG Attachments:

1. The ECG attachments are comprised of various formats since the attachments are used for implementing directions, phone listings, and informational data.

IV. EVENT CLASSIFICATION GUIDE (ECG) USE

A. The Sections of the ECG are a guide. The EALs described in the ECG are not all inclusive and will not identify each and every condition, parameter or event which could lead to an event classification. If the Emergency Coordinator, using his best judgment, determines an Initiating Condition has been satisfied but the specific EAL is in question, he/she should promptly classify the event in accordance with the Initiating Condition. If it is clear that the EAL has not been satisfied, then the Emergency Coordinator should not classify the event based on the Initiating Condition (IC). In any event, if the plant conditions are equivalent to one of the four emergency classes as described in Section II above, that classification should be declared.

Assessment of an Emergency Condition should be completed in a timely manner which is considered to be within about 15 minutes of recognition of an event. If an EAL specifies a duration (e.g. loss of annunciations for >15 min), then the assessment time runs concurrently with the EAL duration time and is the same length. If an event is recognized or reported and the required duration is known to have already been exceeded then the duration portion of the EAL should be considered as being satisfied and the assessment time for the remaining portions of the EAL should be within about 15 minutes from the time of recognition.

B. The ECG is not a stand alone document. At times, the ECG will refer the user to other attachments or procedures for accomplishment of specific evolutions such as: accountability, recovery, development of PARs, etc. They should be followed in a step-by-step fashion.

The ECG should be considered an "Implementing Procedure" and used in accordance with the requirements of a "Category II"

procedure as defined in NC.NA-AP.ZZ-0001(Q) (see definition of Category II below). The ECG's classification Sections allow for judgement and decision making as to whether or not an Emergency Action Level (EAL) is exceeded.

> NOTE:
>
> The word user (person assigned to implement a specific procedure),has been substituted for OPERATOR/TECHNICIAN since EPIPs and ECG Attachments are implemented by personnel in various job classifications.

CATEGORY II - PROCEDURE-AT-THE-JOB

The procedure shall be at the job site. The user shall refer to the procedure at the beginning and end of the job, and as frequently as necessary (based on the task, experience of the user, and familiarization with the task) to complete the job in accordance with the procedure. The user is responsible for completing the procedure correctly regardless of how often he refers to it. Data, hold points, and notifications shall be recorded before proceeding to the next step. Place-keeping checkmark points may be provided, for example, by parentheses "()", and should be completed each time the procedure is referred to and at the end of the procedure. The job supervisor may require the user to perform these procedures with "procedure-in-hand", if he/she feels it is appropriate.

C. To use this ECG volume, follow this sequence:

> NOTE:
>
> Confirmation of actual plant conditions should be made by comparing redundant instrumentation, indications, and/or alarms.

1. Assess the event and/or plant conditions and determine which ECG section(s) is most appropriate.

2. Refer to Section EAL Flowchart diagram(s), review and identify the initiating condition(s) that are related to

the event/condition that has occurred or is ongoing.

(ECG Section 3 has its own unique usage instruction as part of the Fission Product Barrier Table 3.0)

> NOTE:
>
> The Emergency Coordinator should classify and declare an emergency before an Emergency Action Level (EAL) is exceeded if, in the EC's judgement, it is determined that the EAL will be exceeded.

3. Review and assess the associated EALs or RALs as compared to the event and select the highest appropriate emergency or reportable action level. If identification of an EAL is questionable refer to paragraph IV.A above. If there is any doubt with regard to assessment of a particular EAL or RAL, the ECG Basis Document can be reviewed. Words contained in an EAL <u>OR</u> RAL that are bold face are either threshold values associated with that action level <u>OR</u> are words that are defined in the basis for that specific EAL/RAL.

4. Identify and implement the referenced Attachment.

5. After classification and Attachment initiation, return to the ECG Section to review action levels that may result in escalation/deescalation of the emergency level.

D. Guidance for EMERGENCY/NON-EMERGENCY conditions discovered after-the-fact.

> NOTE:
>
> Plant emergency events that are in progress or that have occurred with ongoing consequences, effects, or corrective actions should not be considered "After-The-Fact" events and should therefore be classified and declared as an ongoing emergency event.

1. EMERGENCY CONDITIONS - if "After-The-Fact" (not on-going at the time of discovery) it is discovered that an event or condition occurred that exceeded an Emergency Action

Level (EAL) but was not declared as an emergency, then an emergency declaration is NOT required. A non-emergency, One-Hour Report should be initiated in accordance with ECG Section 11.6, After-The-Fact.

2. NON-EMERGENCY CONDITIONS - if After-The-Fact (regardless of whether the event is on-going at the time of discovery) it is discovered that an event or condition had occurred that should have resulted in the classification and implementation of a non-emergency report (1 hour, 4 hour, 24 hour), the applicable non-emergency report Attachment in the ECG should be implemented.

E. Guidance concerning NRC communications during an emergency.

1. Complete and accurate communications with the NRC Operations Center during emergencies is required and expected. The purpose of notifying the NRC within one-hour of an emergency, is to provide event information when immediate NRC action may be required to protect the public health and safety <u>OR</u> when the NRC needs accurate and timely information to respond to heightened public concern. If the information we provide is not accurate or does not contain sufficient detail, then we hamper the NRC from doing their job.

2. The NRC Data Sheet, along with the Initial Contact Message Form, is the primary vehicle to ensure the NRC is kept informed. General Guidance on completing the event description portion of the NRC Data Sheet is provided in Attachment 5 of the ECG.

SALEM GENERATING STATION
Emergency Action Level and Reportable Action Level
Glossary of Acronyms
Section ii

AC	-	Alternating Current
AFW	-	Auxiliary Feedwater
AFWST	-	Auxiliary Feedwater Storage Tank
ARM	-	Area Radiation Monitor
ATWT	-	Anticipated Transient Without Trip
BNE	-	Bureau of Nuclear Engineering (NJDEPE)
CCPM	-	Corrected Counts per Minute
CDE	-	Committed Dose Equivalent
CEDE	-	Committed Effective Dose Equivalent
CET	-	Core Exit Thermocouple
CFCU	-	Containment Fan Coil Unit
CFR	-	Code of Federal Regulations
CFST	-	Critical Safety Function Tree
CNTMT	-	Containment (Barrier)
CP	-	Control Point
CPM	-	Counts Per Minute
CR	-	Control Room
CRD	-	Control Rod Drive
DC	-	Direct Current
DEI	-	Dose Equivalent Iodine
DEMA	-	Delaware Emergency Management Agency
DEPE	-	NJ Department of Environmental Protection & Energy
DID	-	Direct Inward Dial (phone system)
DOT	-	Department of Transportation
EACS	-	ESF Equipment Area Cooling System
EAL	-	Emergency Action Level
EC	-	Emergency Coordinator
ECCS	-	Emergency Core Cooling Systems

ECG	-	Emergency Classification Guide
EDG	-	Emergency Diesel Generator
EDO	-	Emergency Duty Officer
EMRAD	-	Emergency Radio (NJ)
ENC	-	Emergency News Center
ENS	-	Emergency Notification System (NRC)
EOF	-	Emergency Operations Facility
EOP	-	Emergency Operating Procedures
EPA	-	Environmental Protection Agency
ERM	-	Emergency Response Manager
FC	-	Fuel Clad (Barrier)
FTS	-	Federal Telecommunications System (NRC)
GE	-	General Emergency
GPM	-	Gallons Per Minute
HP	-	Health Physics
IC	-	Initiating Condition
ICMF	-	Initial Contact Message Form
ISOL	-	Isolation
KV	-	KiloVolt
LAC	-	Lower Alloways Creek
LEL	-	Lower Explosive Limit
LCO	-	Limiting Condition for Operation
LDE	-	Lens Dose Equivalent
LOCA	-	Loss of Coolant Accident
MEA	-	Minimum Exclusion Area
MET	-	Meteorological
MPH	-	Miles Per Hour
MRO	-	Medical Review Officer
MSIV	-	Main Steam Isolation Valve
MSL	-	Main Steam Line
NAWAS	-	National Attack Warning Alert System
NCO	-	Nuclear Control Operator
NEO	-	Nuclear Equipment Operator

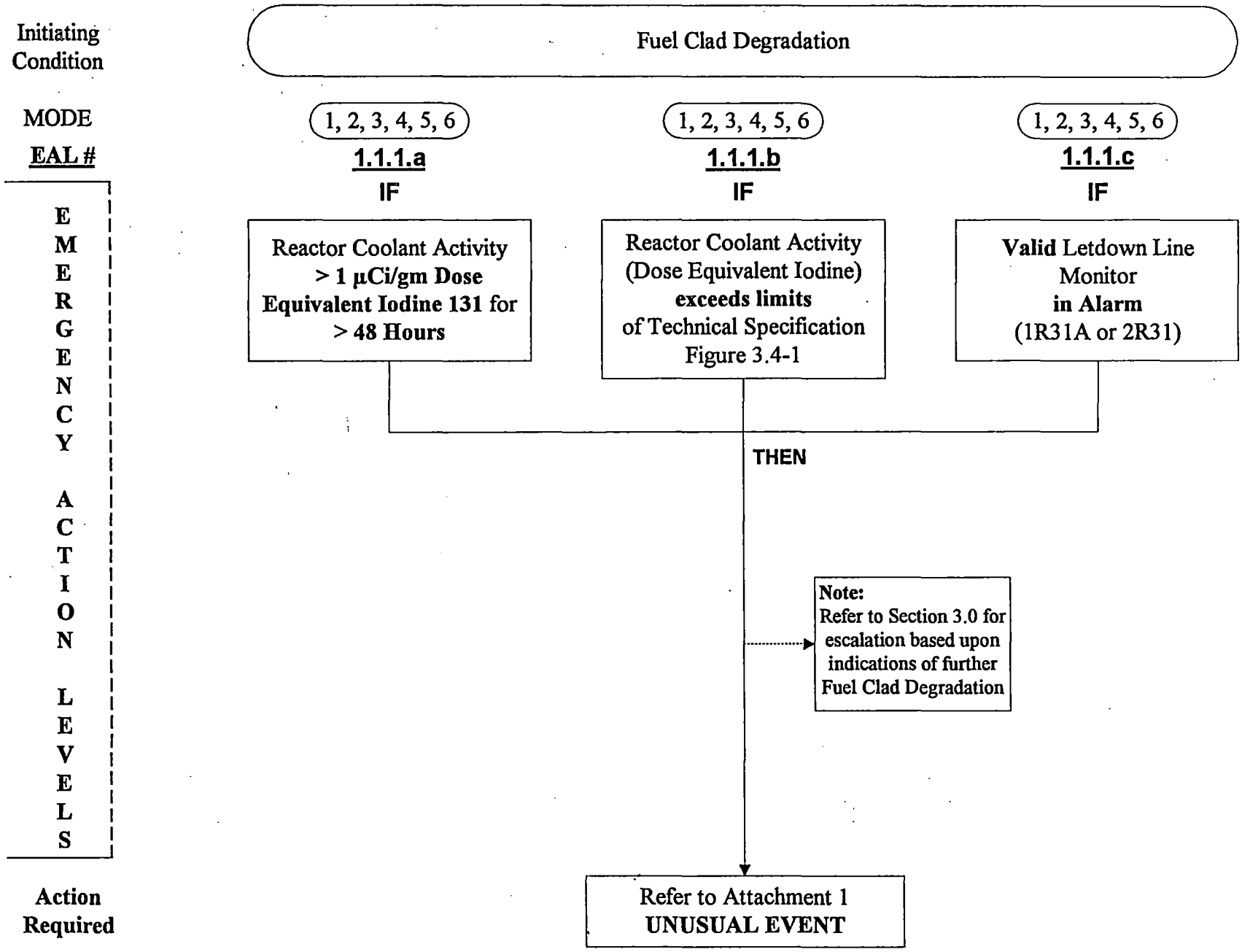
NETS	-	Nuclear Emergency Telecommunications System
NJSP	-	New Jersey State Police
NRC	-	Nuclear Regulatory Commission
NUMARC	-	Nuclear Management and Resources Council
ODCM	-	Offsite Dose Calculation Manual
OEM	-	Office of Emergency Management
OHA	-	Overhead Annunciators
OSC	-	Operations Support Center
PAG	-	Protective Action Guideline
PMP	-	Pump
PSIG	-	Pounds per Square Inch Gauge
PWST	-	Primary Water Storage Tank
PZR	-	Pressurizer
RAD	-	Radiation
RAL	-	Reportable Action Level
RCP	-	Reactor Coolant Pump
RCS	-	Reactor Coolant System
RHR	-	Residual Heat Removal
RMS	-	Radiation Monitoring System
RPS	-	Reactor Protection System
RVLIS	-	Reactor Vessel Level Instrumentation System
RWST	-	Refueling Water Storage Tank
S/G	-	Steam Generator
SAE	-	Site Area Emergency
SBO	-	Station Blackout
SCP	-	Security Contingency Procedure
SDE	-	Skin Dose Equivalent
SDM	-	Shutdown Margin
SGS	-	Salem Generating Station
SGTR	-	Steam Generator Tube Rupture
SI	-	Safety Injection
SNM	-	Special Nuclear Material
SNSS	-	Senior Nuclear Shift Supervisor

SPDS	-	Safety Parameter Display System
SSCL	-	Station Status Checklist
TEDE	-	Total Effective Dose Equivalent
TPARD	-	Total Protective Action Recommendation Dose
TSC	-	Technical Support Center
T/S	-	Technical Specifications
UE	-	Unusual Event
UFSAR	-	Updated Final Safety Analysis Report
UHS	-	Ultimate Heat Sink
USCG	-	United States Coast Guard
VDC	-	Volts Direct Current

FILE: acronyms.sal
Rev date 5/19/95

1.0 Fuel Clad Challenge

1.1 RCS Activity



2.0 RCS Challenge

2.1 RCS Leakage

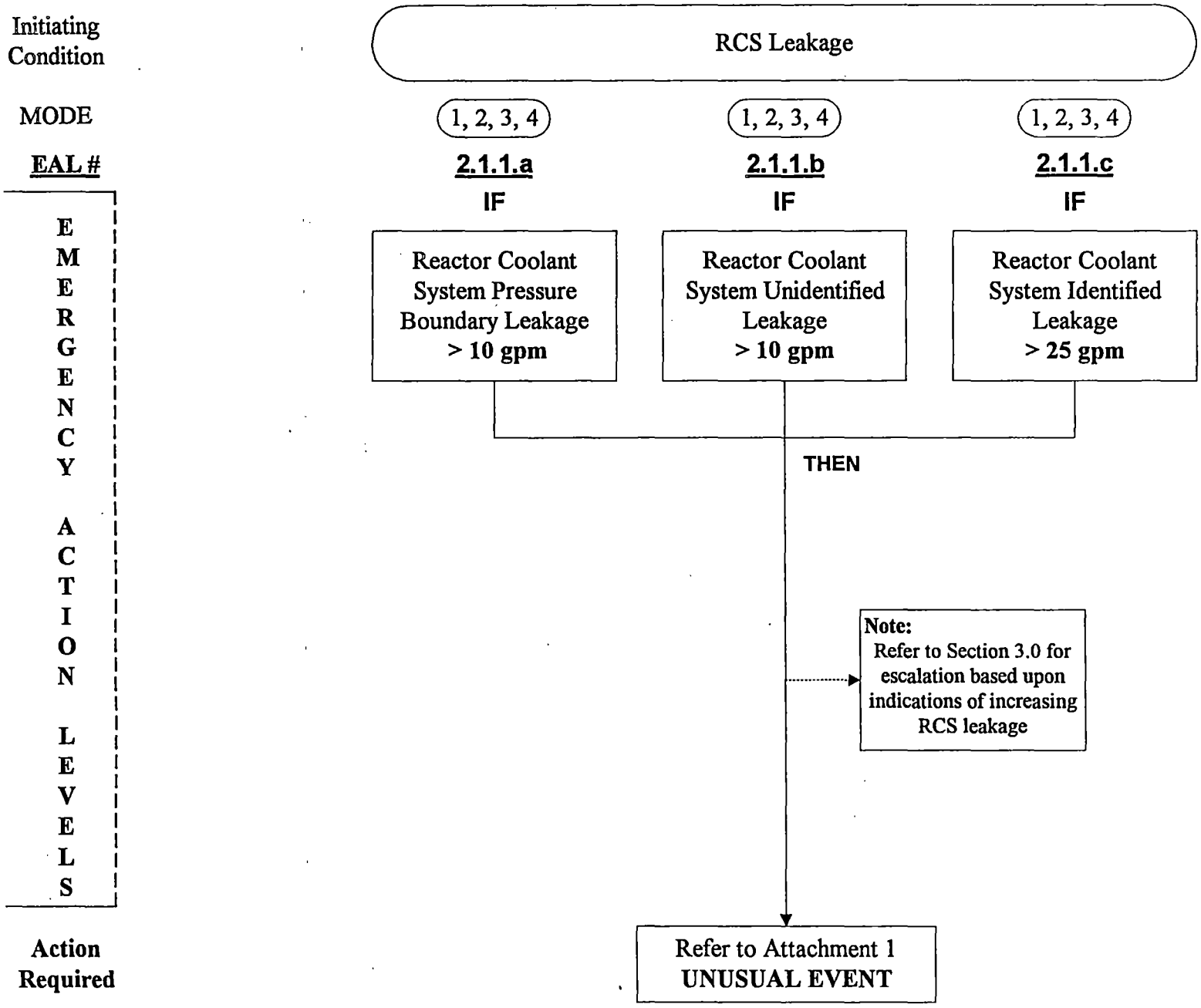


TABLE 3.0 FISSION PRODUCT BARRIERS

APPLICABLE MODES ARE 1, 2, 3, 4 ONLY

NOTE

If the Loss or Potential Loss is considered IMMINENT (may occur within 2 hours), use judgement and classify as if the threshold is exceeded.

Usage Instructions:

1. In the table to the left, review the Emergency Action Levels (EALS) of all columns and identify which need further review.
2. For each of the three barriers, determine the EAL with the highest point value; enter that EAL # in the space provided at the bottom of the column, and circle the corresponding point value. No more then one EAL should be selected for each barrier.
3. Use the Tabulation section at the bottom of the table and add the point values circled for the three barriers and enter the sum below:
4. Classify based on the point value sum as follows:

If the sum is:	Classify as:	Refer to Attachment:
1, 2	UNUSUAL EVENT	1
3, 4	ALERT	2
5, 6, 7, 8	SITE AREA EMERGENCY	3
≥ 9	GENERAL EMERGENCY	4

CLASSIFICATION

5. Implement the appropriate ECG attachment per above chart.
6. Continue to review the EALs on this Table for changes that could result in emergency escalation or deescalation.

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3.1 Fuel Clad Barrier

3.1.1 CRITICAL SAFETY FUNCTION STATUS

POTENTIAL LOSS = 3 PTs	LOSS = 4 PTs
EAL # 3.1.1.a CORE COOLING PURPLE PATH - OR - EAL # 3.1.1.b HEAT SINK RED PATH	EAL # 3.1.1.c CORE COOLING RED PATH

- OR -

3.1.2 PRIMARY COOLANT IODINE CONCENTRATION

POTENTIAL LOSS = 0 PTs	LOSS = 4 PTs
Not Applicable	EAL # 3.1.2 Reactor Coolant activity > 300 µCi/gm Dose Equivalent I-131

- OR -

3.1.3 CORE EXIT THERMOCOUPLES (CETs)

POTENTIAL LOSS = 3 PTs	LOSS = 4 PTs
EAL # 3.1.3.a 5 or more CETs > 700 °F	EAL # 3.1.3.b 5 or more CETs > 1200 ° F

- OR -

3.1.4 RX VESSEL LEVEL INDICATION SYSTEM (RVLIS)

POTENTIAL LOSS = 3PTs	LOSS = 0 PTs
EAL # 3.1.4.a RVLIS Full Range < 50% - OR - EAL # 3.1.4.b RVLIS Dynamic Range Indicates ANY one of the following: • 4 RCPs I/S < 44% • 3 RCPs I/S < 30% • 2 RCPs I/S < 20% • 1 RCP I/S < 13%	Not Applicable

- OR -

3.1.5 CONTAINMENT RADIATION LEVELS

POTENTIAL LOSS = 0 PTs	LOSS = 4 PTs
Not Applicable	EAL # 3.1.5 R44A or R44B > 300 R/hr

- OR -

3.1.6 EMERGENCY COORDINATOR JUDGEMENT

POTENTIAL LOSS = 3 PTs	LOSS = 4 PTs
EAL # 3.1.6 Any condition, in the opinion of the EC, that indicates a potential loss (3 pts) or loss (4 pts) of the Fuel Clad Barrier	

3.2 RCS Barrier

3.2.1 CRITICAL SAFETY FUNCTION STATUS

POTENTIAL LOSS = 3 PTs	LOSS = 0 PTs
EAL # 3.2.1.a THERMAL SHOCK RED PATH - OR - EAL # 3.2.1.b HEAT SINK RED PATH	Not Applicable

- OR -

3.2.2 RCS LEAK RATE

POTENTIAL LOSS = 3 PTs	LOSS = 4 PTs
EAL # 3.2.2.a One Centrifugal Charging Pump CANNOT maintain PZR level > 17% with letdown secured (as a result of RCS leakage).	EAL # 3.2.2.b Subcooling < 10 °F as a result of RCS leakage

- OR -

3.2.3 STEAM GENERATOR TUBE RUPTURE

POTENTIAL LOSS = 3 PTs	LOSS = 4 PTs
EAL # 3.2.3.a One Centrifugal Charging Pump CANNOT maintain PZR level > 17% with letdown secured (as a result of a SGTR) AND Control Room has determined that an SGTR has occurred	EAL # 3.2.3.b One Centrifugal Charging Pump CANNOT maintain PZR level >17% with letdown secured (as a result of a SGTR) AND Ruptured Steam Generator pressure is decreasing in an uncontrolled manner or completely depressurized AND Prolonged, direct secondary leakage to the environment

- OR -

3.2.4 CONTAINMENT RADIATION LEVELS

POTENTIAL LOSS = 0 PTs	LOSS = 4 PTs
Not Applicable	EAL # 3.2.4 Valid Containment Radiation level which exceeds ANY one of the following Containment Rad Monitors values: • R2 > 1 R/hr • R44A >10 R/hr • R44B >10 R/hr

- OR -

3.2.5 EMERGENCY COORDINATOR JUDGEMENT

POTENTIAL LOSS = 3 PTs	LOSS = 4 PTs
EAL # 3.2.5 Any condition, in the opinion of the EC, that indicates a potential loss (3 pts) or loss (4 pts) of the RCS Barrier	

3.3 CNTMT Barrier

3.3.1 CRITICAL SAFETY FUNCTION STATUS

POTENTIAL LOSS = 1 PT	LOSS = 0 PTs
EAL # 3.3.1.a CNTMT ENVIRONMENT RED PATH - OR - EAL # 3.3.1.b CORE COOLING RED PATH for > 15 minutes	Not Applicable

- OR -

3.3.2 CONTAINMENT PRESSURE

POTENTIAL LOSS = 1 PT	LOSS = 2 PTs
EAL # 3.3.2.a Containment H_2 > 4 % - OR - EAL # 3.3.2.b CNTMT Press. > 15 psig with EITHER one of the following: • No CNTMT Spray AND < 5 CFCUs Running in "Low Speed" • One CNTMT Spray Train I/S AND < 3 CFCUs Running in "Low Speed"	EAL # 3.3.2.c A Rapid Unexplained Containment Pressure Decrease following an initial Increase to > 4 psig

- OR -

3.3.3 CONTAINMENT ISOLATION

POTENTIAL LOSS = 1 PT	LOSS = 2 PTs
EAL # 3.3.3.a CNTMT Sump Level > 76%	EAL # 3.3.3.b Valid CNTMT ϕ A, ϕ B or CNTMT Vent Isol Signal AND Flow path from CNTMT to the environment

- OR -

3.3.4 CONTAINMENT BYPASS

POTENTIAL LOSS = 1 PT	LOSS = 2 PTs
EAL # 3.3.4.a Unisolable, Faulted Steam Generator OUTSIDE of Containment as indicated by S/G pressure decreasing in an uncontrolled manner or completely depressurized	EAL # 3.3.4.b Primary to Secondary Leakage > Tech Spec Limits AND Prolonged, Direct Secondary leakage to the environment - OR - EAL # 3.3.4.c LOCA conditions AND CNTMT Press. or Sump Level NOT increasing as expected

- OR -

3.3.5 CONTAINMENT RADIATION LEVELS

POTENTIAL LOSS = 1 PT	LOSS = 0 PTs
EAL # 3.3.5 R44A or R44B > 2000 R/hr	Not Applicable

- OR -

3.3.6 EMERGENCY COORDINATOR JUDGEMENT

POTENTIAL LOSS = 1 PT	LOSS = 2 PTs
EAL # 3.3.6 Any condition, in the opinion of the EC, that indicates a potential loss (1 pt) or loss (2 pts) of the Containment Barrier	

FUEL CLAD BARRIER EAL# _____	RCS BARRIER EAL# _____	CNTMT BARRIER EAL# _____	Total (All 3 barriers)
POINT VALUE 0 / 3 / 4 (circle one) +	POINT VALUE 0 / 3 / 4 (circle one) +	POINT VALUE 0 / 1 / 2 (circle one)	= _____ Emerg. Classification Pts.

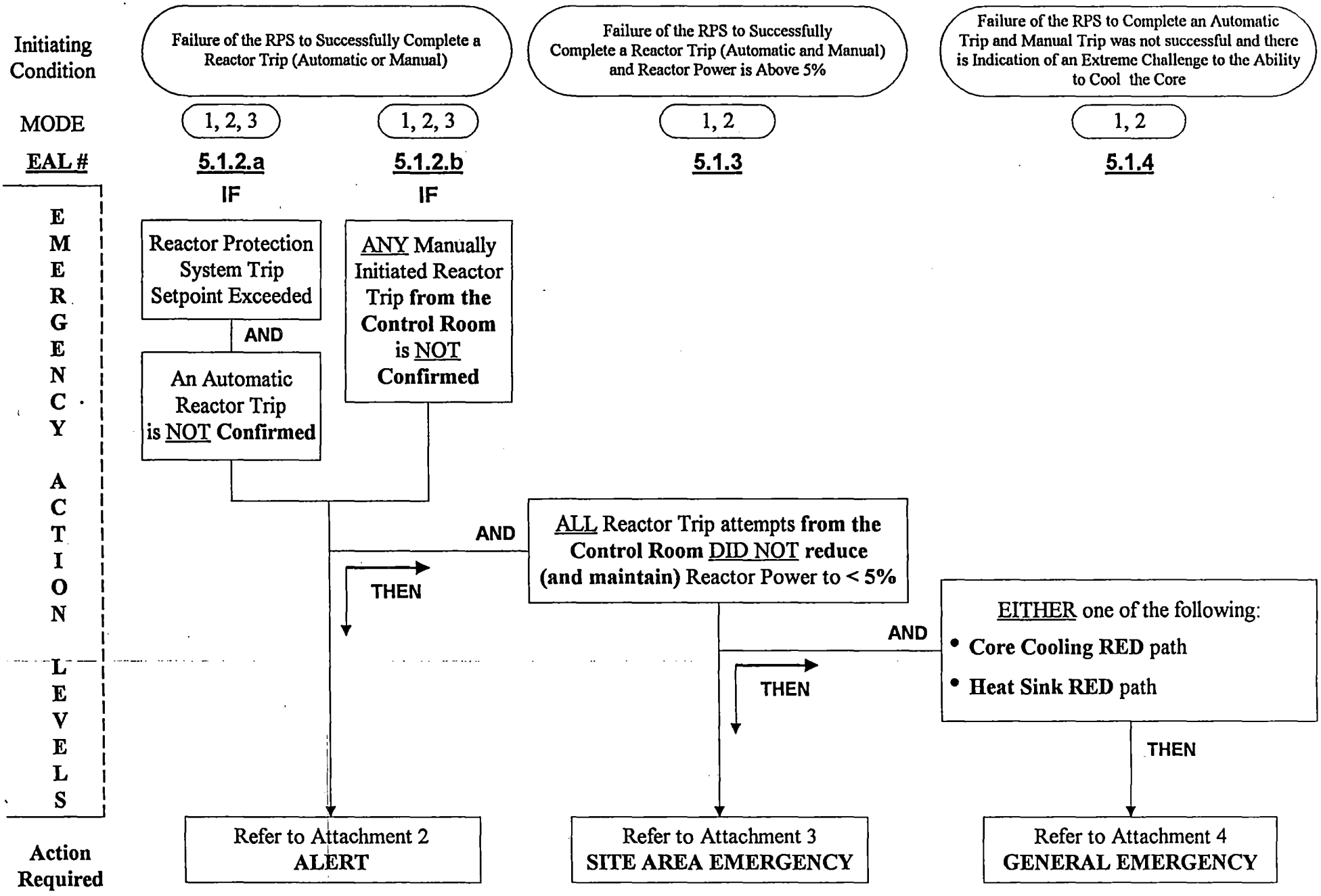
4.0 Miscellaneous

4.1 Emergency Coordinator Discretion

Initiating Condition	Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of an Unusual Event	Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of an Alert	Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of a Site Area Emergency	Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of a General Emergency
MODE	All	All	All	All
EAL #	4.1.1	4.1.2	4.1.3	4.1.4
EMERGENCY ACTION LEVELS	IF Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate a **Potential Degradation of Plant Safety** THEN	IF Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate plant safety systems **(more than one)** are, or may be degraded AND Increased monitoring of plant functions is warranted THEN	IF Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate EITHER one of the following: • The potential for an uncontrolled radiological release or the source term available in the Containment atmosphere, could result in Site Boundary dose rates in **excess of 100 mRem/hr** • Criteria for declaration of a Site Area Emergency per the ECG Introduction Section exists THEN	IF Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate EITHER one of the following: • The potential for uncontrolled radiological releases expected to **exceed** Protective Action Guidelines levels per EAL 6.1.4.a • Criteria for declaration of a General Emergency per the ECG Introduction Section exists THEN
Action Required	Refer to Attachment 1 **UNUSUAL EVENT**	Refer to Attachment 2 **ALERT**	Refer to Attachment 3 **SITE AREA EMERGENCY**	Refer to Attachment 4 **GENERAL EMERGENCY**

5.0 Failure to Trip

5.1 ATWT



6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

Initiating Condition: Any Unplanned Release of Gaseous Radioactivity to the Environment that Exceeds Two Times the Radiological Technical Specifications for 60 Minutes or Longer

EMERGENCY ACTION LEVELS

MODE	All	All	All	All
EAL #	6.1.1.a	6.1.1.b	6.1.1.c	6.1.1.d
	Dose Assessment IF	Measured Dose Rate IF	Sample Analysis IF	Alarm Indications IF
	Dose Assessment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL: • TEDE 4-Day Dose **≥ 2.0E-01 mRem** • Thyroid-CDE Dose **≥ 6.8E-01 mRem**	Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **.05 mRem/hr** above normal background	Gaseous effluent release sample analysis on EITHER one of the following indicates a concentration of: • **≥ 1.28E-02 µCi/cc Total Noble Gas** • **≥ 1.11E-06 µCi/cc I-131**	**Valid** Plant Vent Effluent Alarm AND Release rate EXCEEDS **4.84E+05 µCi/sec Total Noble Gas** AND Dose Assessment is NOT available

AND

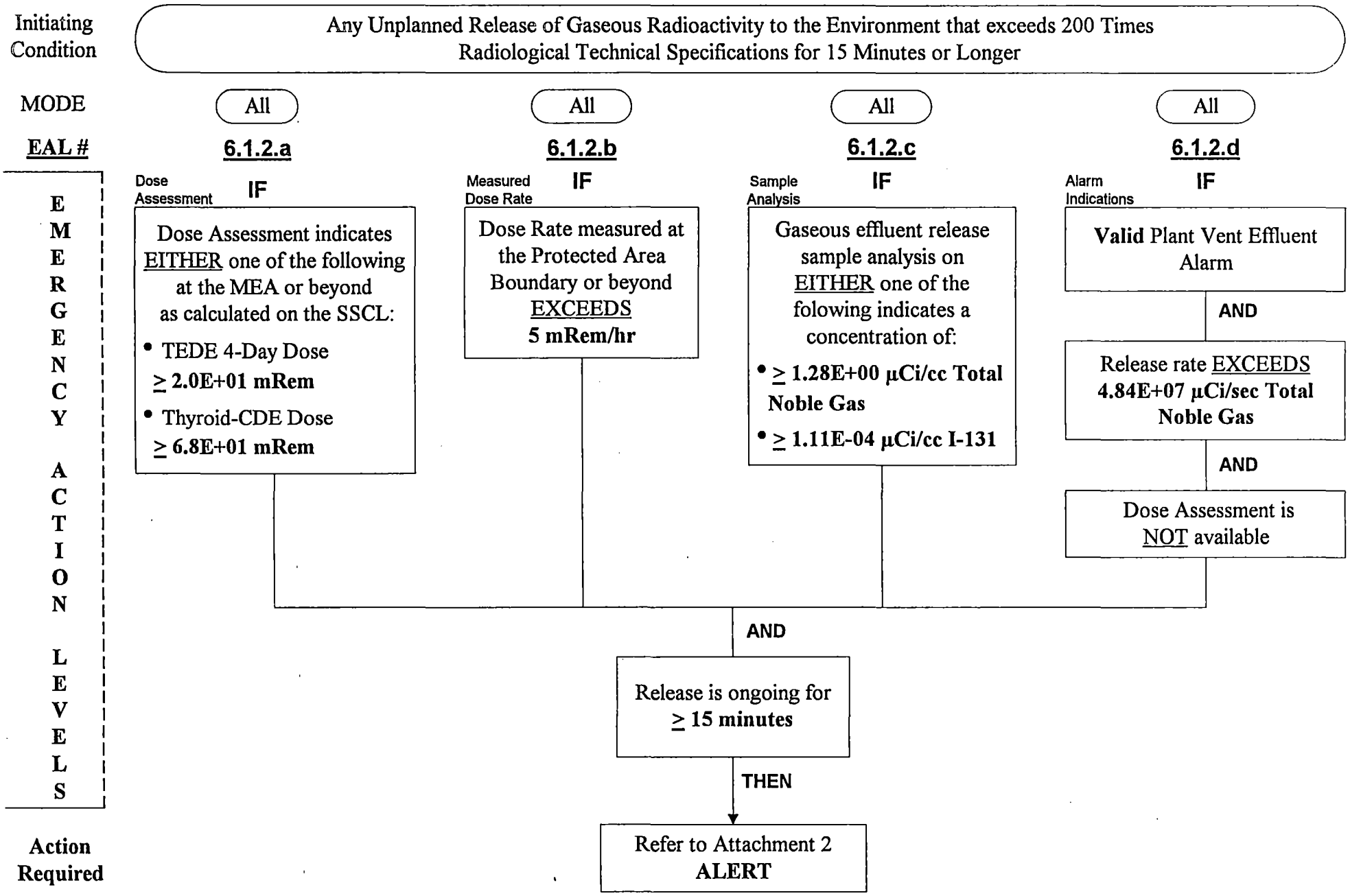
Release is ongoing for **≥ 60 minutes**

THEN

Action Required: Refer to Attachment 1 **UNUSUAL EVENT**

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release



6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

Initiating Condition

Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 100 mRem Total Effective Dose Equivalent (TEDE) or 500 mRem Thyroid-CDE Dose for the Actual or Projected Duration of the Release

MODE

EAL #

EMERGENCY ACTION LEVELS

Action Required

All	All	All
6.1.3.a	**6.1.3.b**	**6.1.3.c**
Dose Assessment **IF**	Measured Dose Rate **IF**	Sample Analysis **IF**
Dose assessment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL: • TEDE 4-Day Dose **≥ 1.0E+02 mRem** • Thyroid-CDE Dose **≥ 5.0E+02 mRem**	Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **100 mRem/hr** **AND** Release is expected to continue for **≥ 15 minutes**	Analysis of field survey samples at the Protected Area Boundary indicates EITHER one of the following: • **≥ 5.24E+02 CCPM** • **≥ 4.63E-07 µCi/cc I-131**

THEN

Refer to Attachment 3
SITE AREA EMERGENCY

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

Initiating Condition: Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 1000 mRem Total Effective Dose Equivalent (TEDE) or 5000 mRem Thyroid-CDE Dose for the Actual or Projected Duration of the Release

EMERGENCY ACTION LEVELS

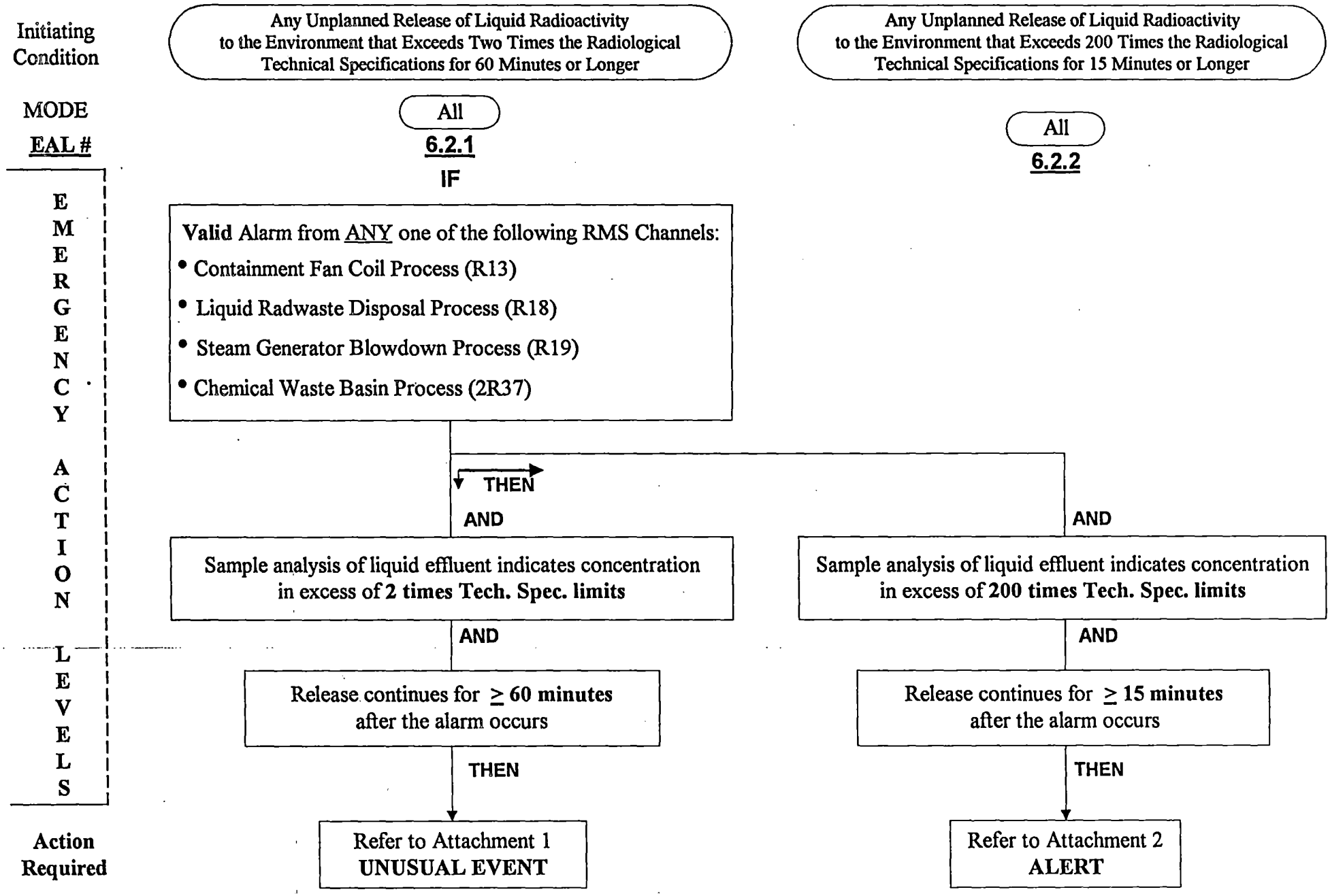
MODE	All	All	All
EAL #	6.1.4.a	6.1.4.b	6.1.4.c
	Dose Assessment IF	Measured Dose Rate IF	Sample Analysis IF
	Dose assessment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL: • TEDE 4-Day Dose **≥ 1.0E+03 mRem** • Thyroid-CDE Dose **≥ 5.0E+03 mRem**	Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **1000 mRem/hr** AND Release is expected to continue for **≥ 15 minutes**	Analysis of field survey samples at the Protected Area Boundary indicates EITHER one of the following: • **≥ 5.24E+03 CCPM** • **≥ 4.63E-06 µCi/cc I-131**

THEN

Action Required: Refer to Attachment 4 **GENERAL EMERGENCY**

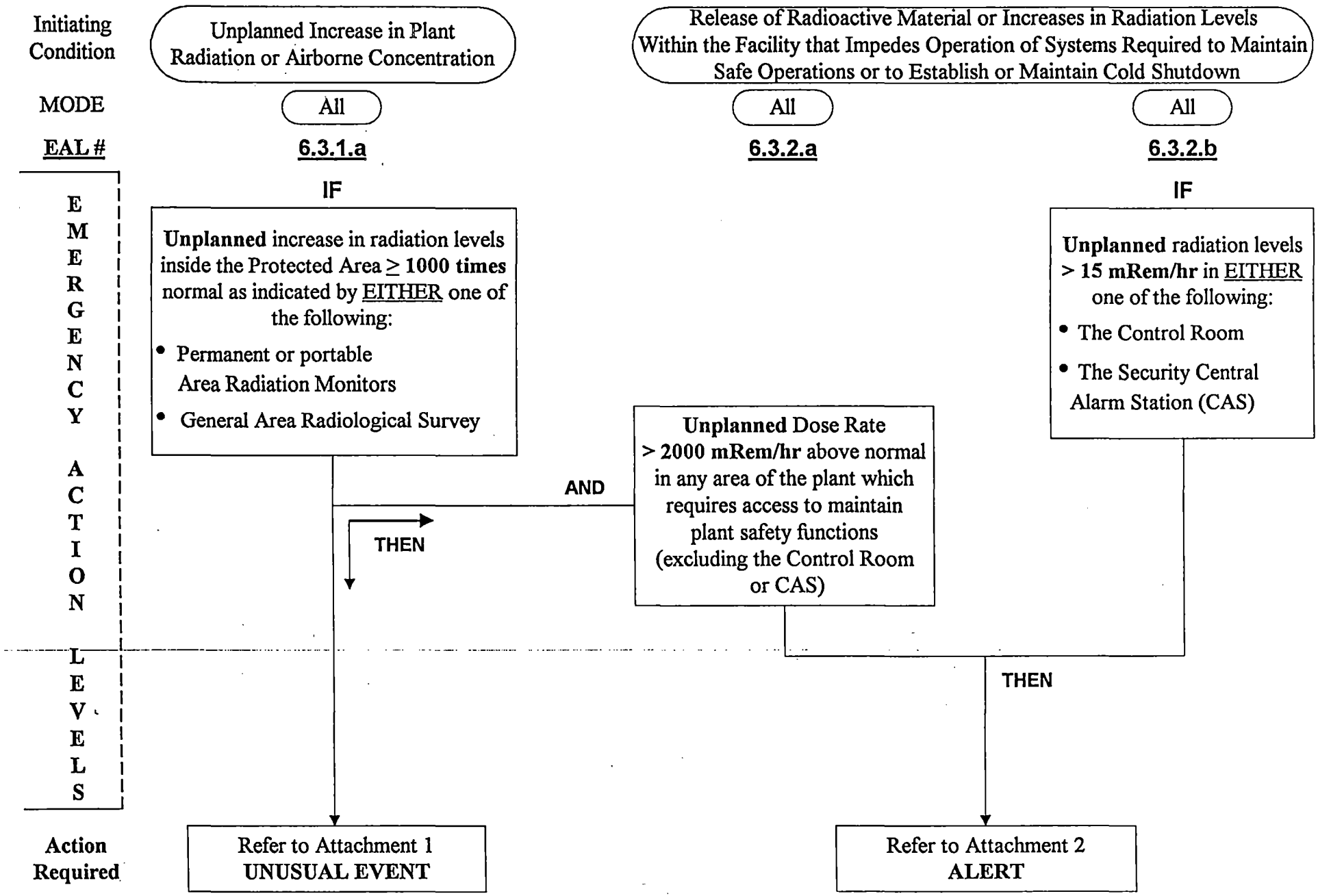
6.0 Radiological Releases/Occurrences

6.2 Liquid Effluent Release



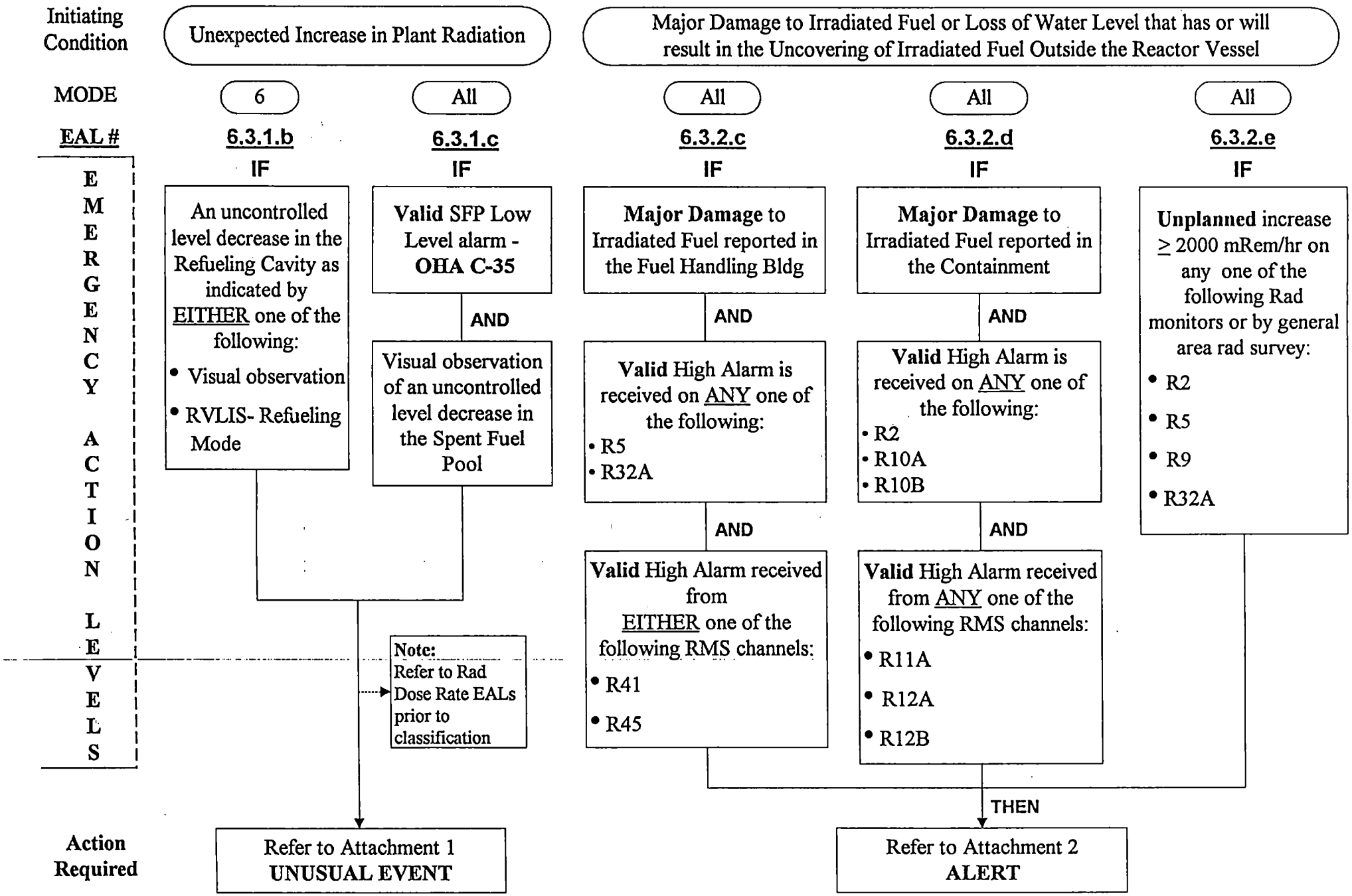
6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences



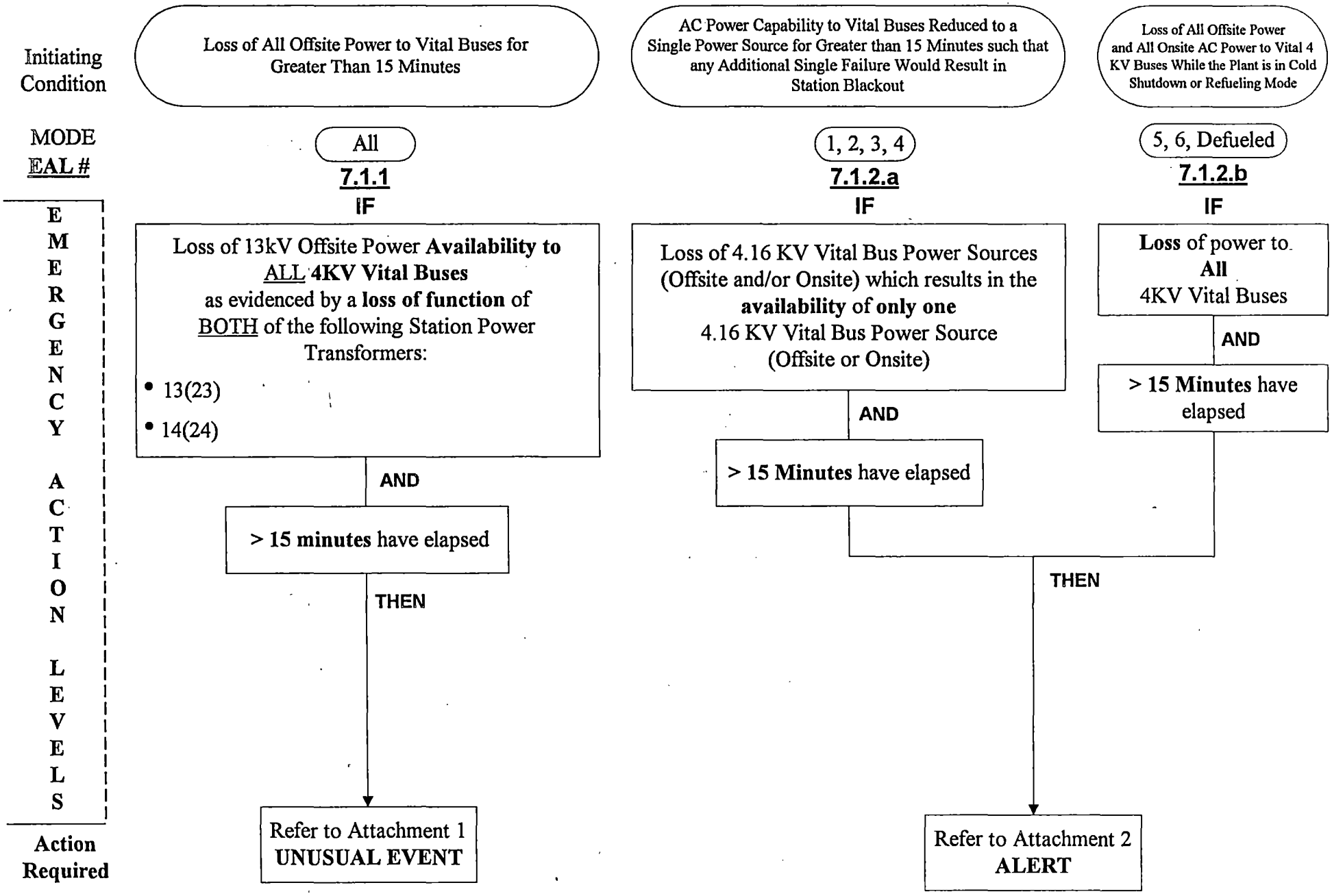
6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences



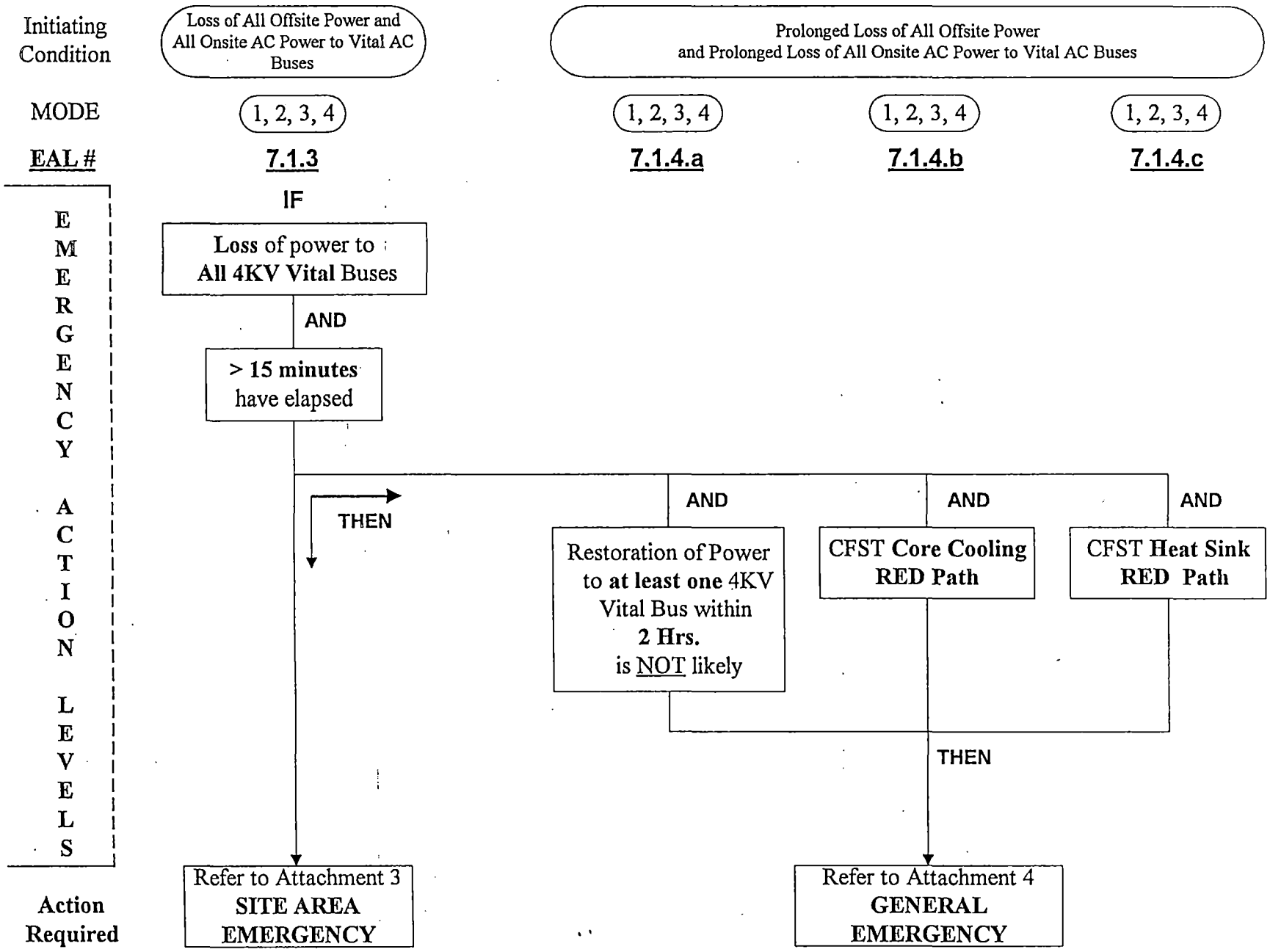
7.0 Electrical Power

7.1 Loss of AC Power Capabilities



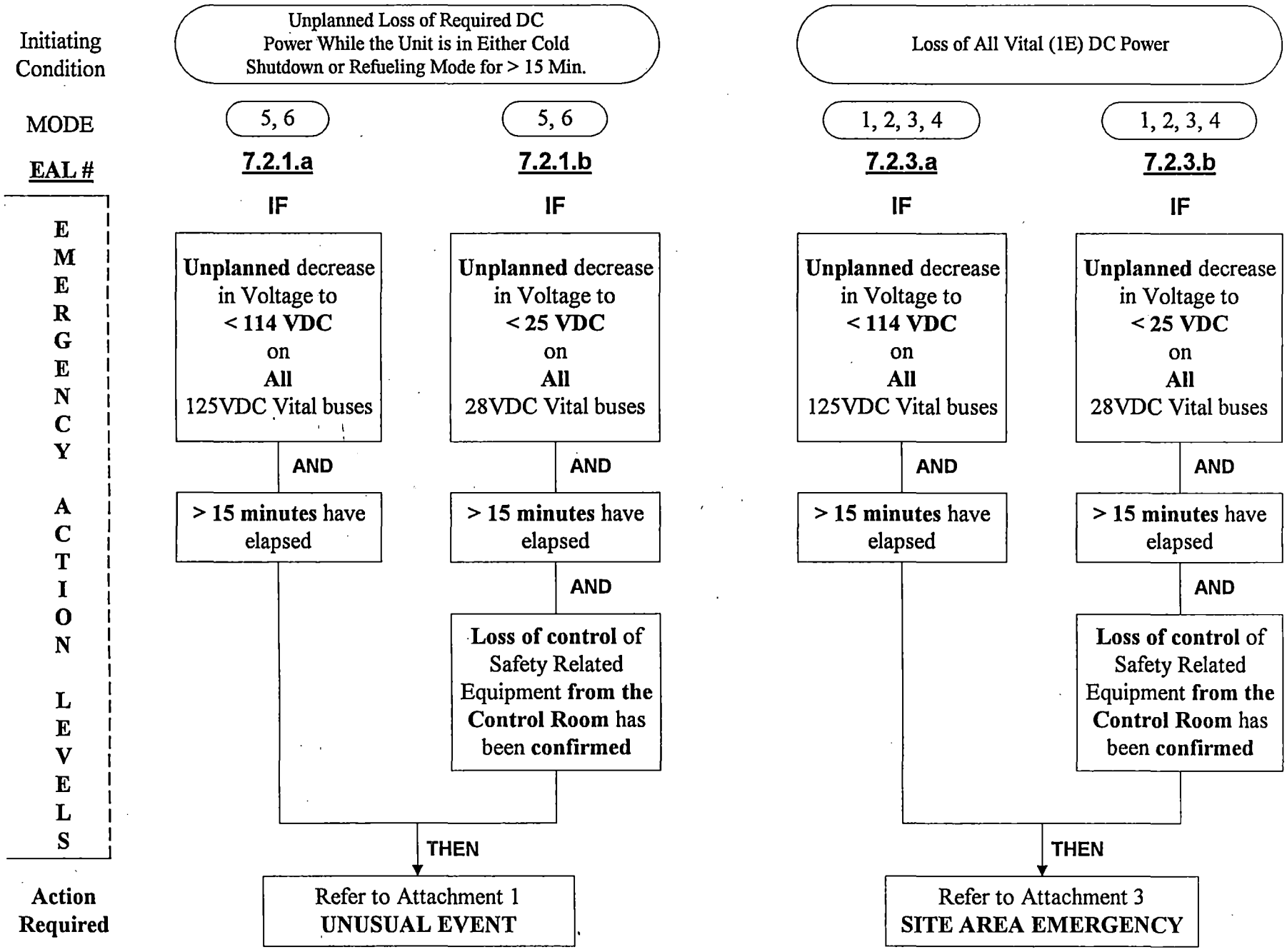
7.0 Electrical Power

7.1 Loss of AC Power Capabilities



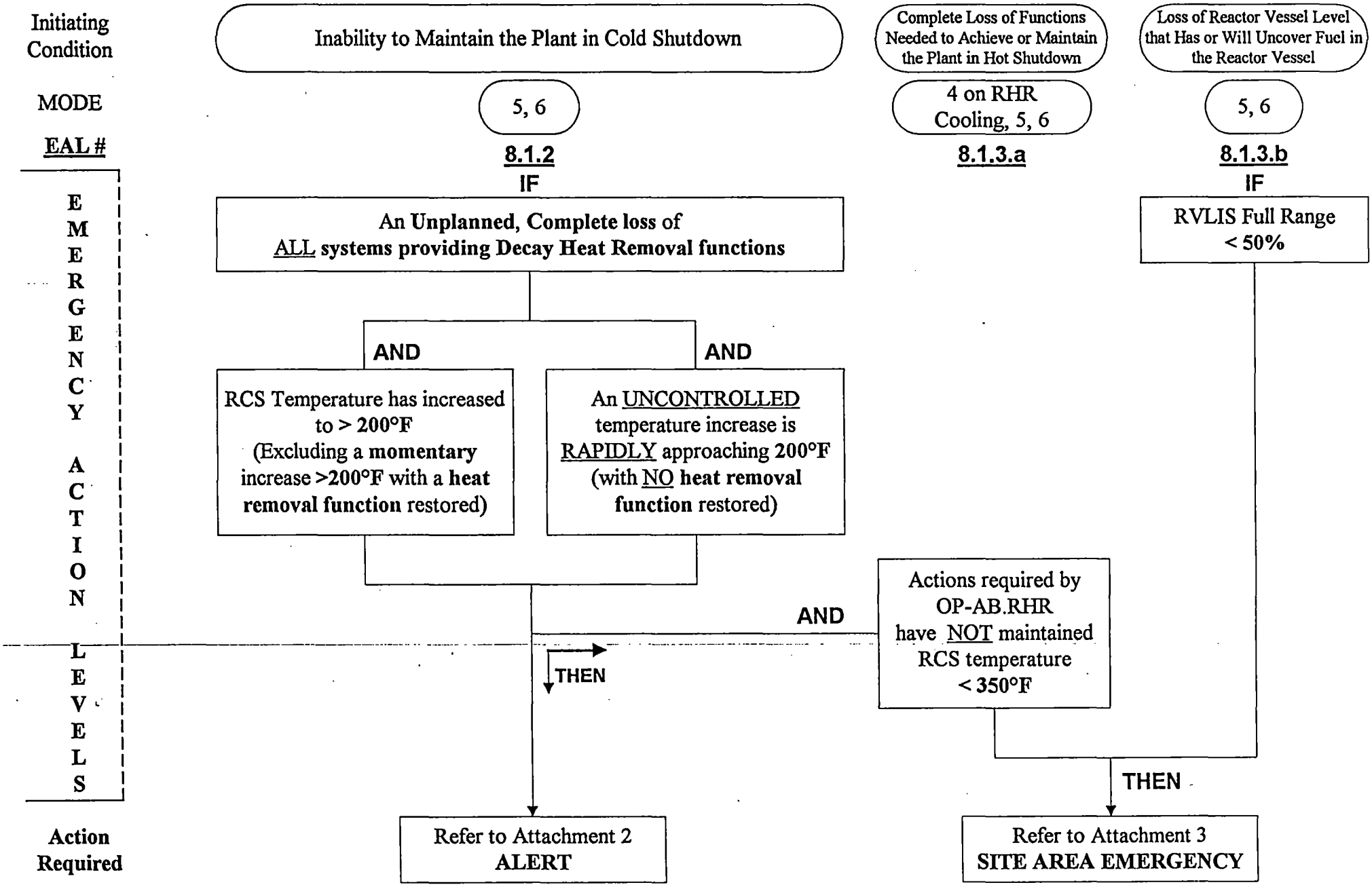
7.0 Electrical Power

7.2 Loss of DC Power Capabilities



8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty



8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty

Initiating Condition

MODE

EAL #

EMERGENCY ACTION LEVELS

Action Required

Complete Loss of Functions Needed to Achieve or Maintain the Plant in Hot Shutdown

8.1.3.c — 1, 2, 3, 4

IF

Heat Sink RED Path

8.1.3.d — 1, 2, 3, and 4 with RHR in Injection Mode

IF

All Turbine Stop Valve **Closed**

AND

LOSS of **All** Steam Dump Valves

AND

LOSS of **All** MS10 Valve Control (in Auto AND Manual)

AND

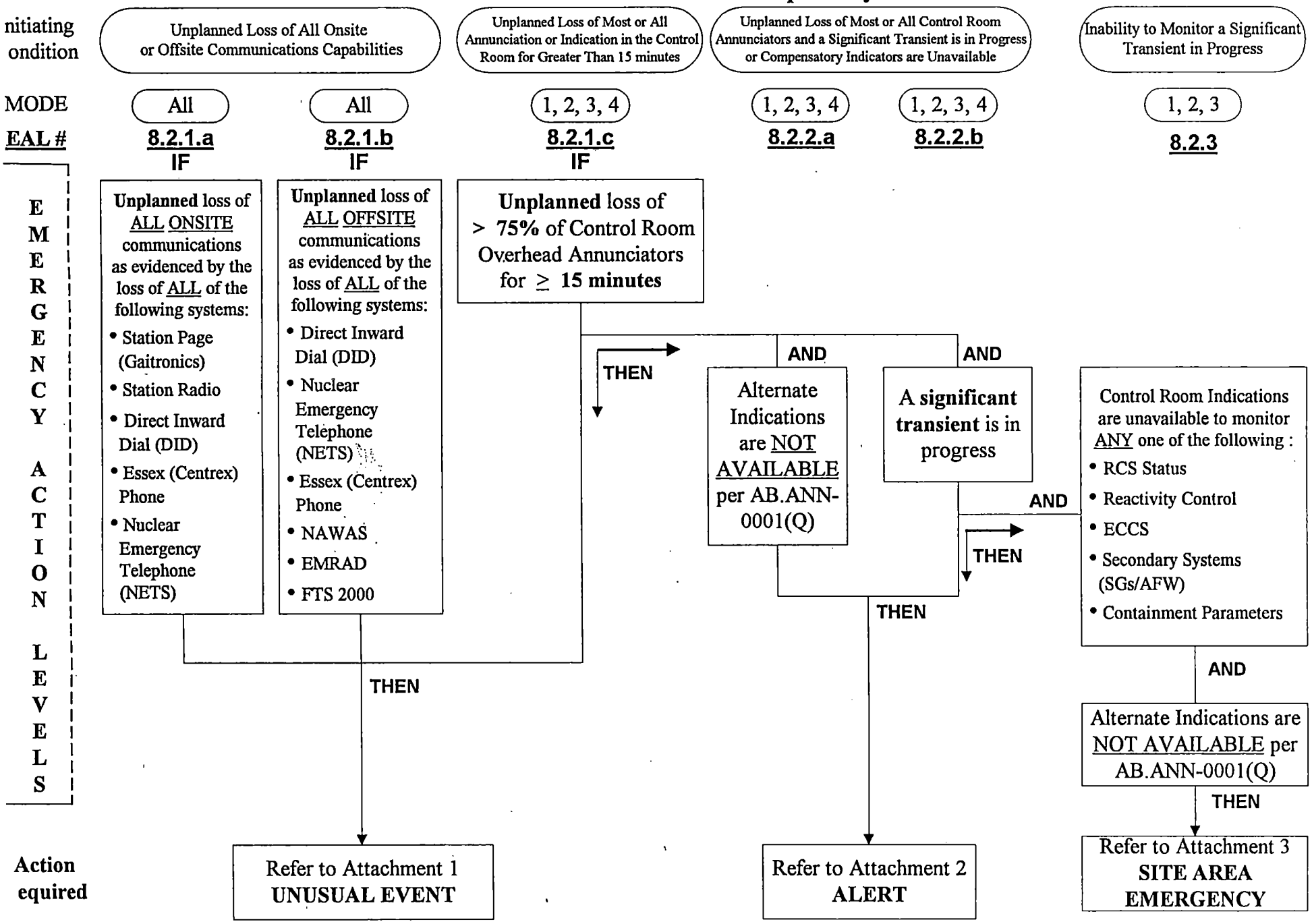
>15 minutes have elapsed

THEN

Refer to Attachment 3
SITE AREA EMERGENCY

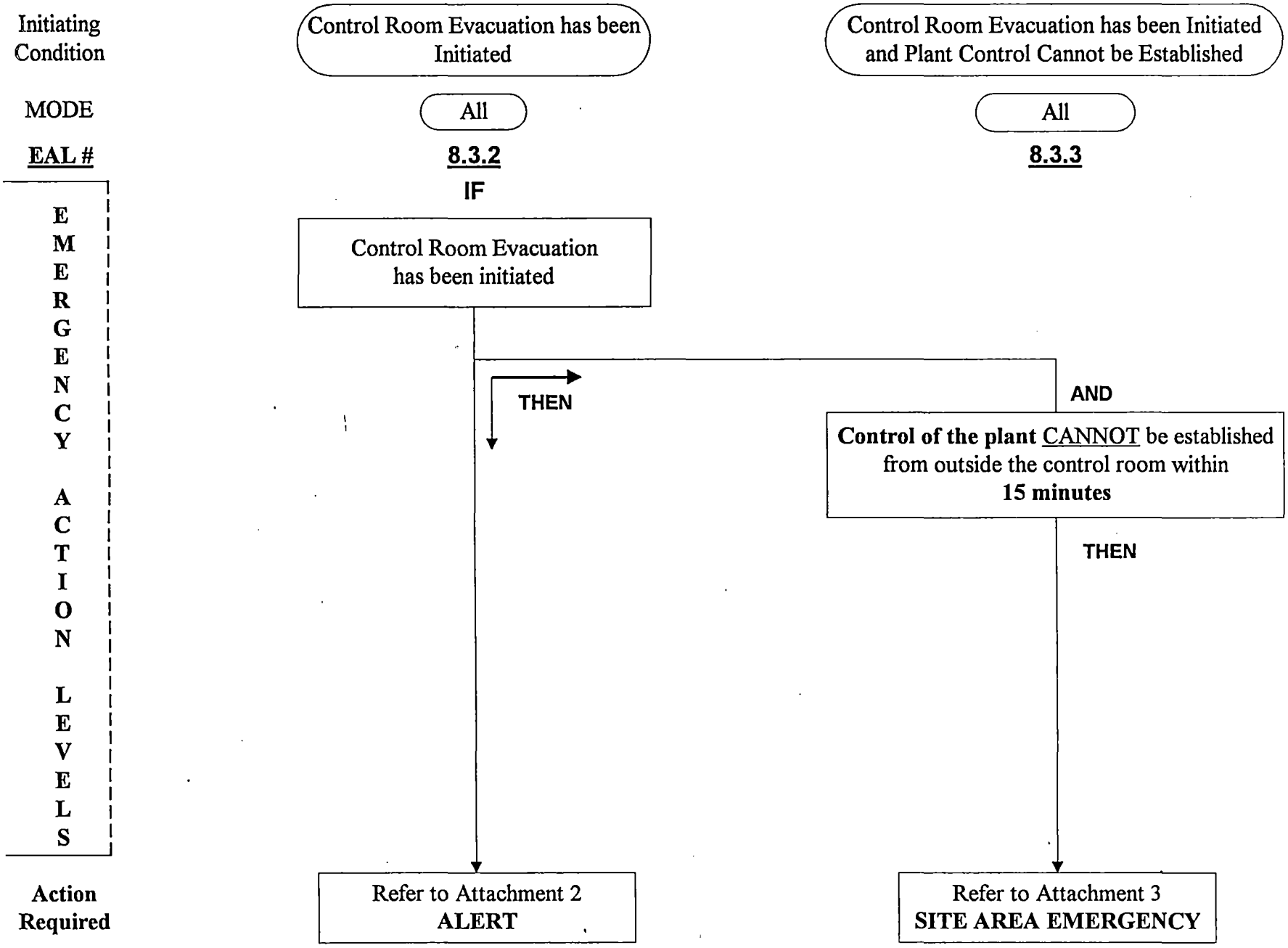
8.0 System Malfunctions

8.2 Loss of Assessment Capabililty



8.0 System Malfunctions

8.3 Loss of Control Room Habitibililty



8.0 System Malfunctions

8.4 Technical Specifications

Initiating Condition

MODE

EAL #

EMERGENCY ACTION LEVELS

Action Required

Inability to Reach Required Mode Within Technical Specification Limits

1, 2, 3, 4

8.4.1

IF

Plant is NOT brought to the required Mode within the Technical Specification required time limit

THEN

Refer to Attachment 1
UNUSUAL EVENT

9.1 Security Threats

Initiating Condition	Confirmed Security Event Which Indicates a Potential Degradation in the Level of Safety of the Plant	Security Event in a Plant Protected Area	Security Event in a Plant Vital Area	Security Event Resulting in Loss of Ability to Reach or Maintain Cold Shutdown
MODE	All	All	All	All
EAL #	9.1.1	9.1.2	9.1.3	9.1.4
EMERGENCY ACTION LEVELS	IF Confirmed security threat directed toward the station as evidenced by ANY one of the following: • Credible threat of malicious acts or destructive device within the Protected Area resulting in **SCP-5** implementation • Credible intrusion or assault threat to the Protected Area resulting in **SCP-5** implementation • Attempted intrusion or assault to the Protected Area resulting in **SCP-7** or **SCP-11** implementation • Malicious acts attempted or discovered within the Protected Area resulting in **SCP-10** implementation • Hostage/Extortion situation that threatens normal plant operations resulting in **SCP-8** implementation • Destructive Device discovered within the Protected Area resulting in **SCP-10** implementation	IF Confirmed hostile intrusion or malicious acts as evidenced by ANY one of the following: • Discovery of an intruder(s), armed and violent, within the Protected Area resulting in **SCP-6** implementation • Hostage held on-site in a non-vital area resulting in **SCP-8** implementation • Malicious acts or destructive device discovered in a Vital Area resulting in **SCP-10** implementation	IF Confirmed hostile intrusion or malicious acts in plant Vital Areas as evidenced by : • Discovery of an intruder(s), armed and violent, within the Vital Area resulting in **SCP-6** implementation	IF Security event resulting in the **actual loss of physical control** of EITHER one of the following: • Control Room • Remote Shutdown Panel 213
	THEN	THEN	THEN	THEN
Action Required	Refer to Attachment 1 **UNUSUAL EVENT**	Refer to Attachment 2 **ALERT**	Refer to Attachment 3 **SITE AREA EMERGENCY**	Refer to Attachment 4 **GENERAL EMERGENCY**

9.0 Hazards - Internal/External

9.2 Fire

Initiating Condition

MODE
EAL #

EMERGENCY ACTION LEVELS

Fire Within the Protected Area Boundary Not Extinguished Within 15 Minutes of Detection

All
9.2.1
IF

Valid Fire Alarm is received in the Control Room

All
9.2.1
IF

Report of a **fire** from personnel at the scene

AND

Fire within ANY one of the following Plant Structures (EXCLUDING small **fires** that have NO potential to affect **Safety Systems** or Protected Area Permanent Plant Structures)

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area
- Turbine Building

AND

The Fire is NOT extinguished within **15 minutes** of EITHER one of the following:

- Receipt of a **Valid Fire** Alarm
- Report of a fire from the scene

THEN

Action Required

Refer to Attachment 1
UNUSUAL EVENT

Fire Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown

All
9.2.2
IF

Fire within ANY one of the following Plant Vital Structures:

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

The Fire is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:

- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE **Safety System**
- Any Plant Vital Structure which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

THEN

Refer to Attachment 2
ALERT

9.0 Hazards - Internal/External

9.3 Explosion

Initiating Condition

MODE

EAL #

EMERGENCY ACTION LEVELS

Action Required

Natural and Destructive Phenomena Affecting the Protected Area

All

9.3.1

IF

Confirmed Explosion within the Protected Area

AND

Report of visible damage to Plant equipment or to Protected Area Permanent Plant Structures

THEN

Refer to Attachment 1
UNUSUAL EVENT

Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown

All

9.3.2

IF

Confirmed Explosion within ANY one of the following Plant Vital Structures:

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

The Explosion is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:

- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE **Safety System**
- Any Plant Vital Structure which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

THEN

Refer to Attachment 2
ALERT

9.0 Hazards - Internal/External

9.4 Toxic Gases

Initiating Condition: Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant

EMERGENCY ACTION LEVELS

MODE	All	All	All
EAL #	9.4.1.a	9.4.1.b	9.4.1.c
	IF	IF	IF
	Notification by Local, County, or State Officials for the potential need to EVACUATE non-essential personnel due to an Offsite **Toxic Gas** release	**Uncontrolled Toxic Gas** release within the Protected Area in ANY area which does not normally require an atmospheric survey or Respiratory Protection for entry	**Uncontrolled Flammable Gas** release within the Protected Area that RESULTS in Flammable Gas concentrations EXCEEDING **25% of the LEL**
	AND		
	SNSS deems evacuation of non-essential personnel is required		
		AND	
		Routine Plant Operations are IMPEDED based on EITHER one of the following: • **Access restrictions** caused by the **uncontrolled** release • Personnel injuries have occurred as a result of the release	
	THEN		
Action Required	Refer to Attachment 1 UNUSUAL EVENT		

9.0 Hazards - Internal/External

9.4 Toxic Gases

Initiating Condition: Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown Conditions

MODE: All

EAL #: 9.4.2.a

IF

Uncontrolled Toxic Gas release within ANY one of the following Plant Structures

- Auxilary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Area
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

Toxic Gas concentrations result in ANY one of the following:

- An IDLH atmosphere
- Plant personnel report severe adverse health reactions, including burning eyes, nose, throat, dizziness
- The Lower Toxicity Limit being EXCEEDED

MODE: All

EAL #: 9.4.2.b

IF

Uncontrolled Flammable Gas release within ANY one of the following Plant Structures:

- Auxilary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Area
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

Flammable Gas concentrations EXCEED **50% of the LEL**

AND

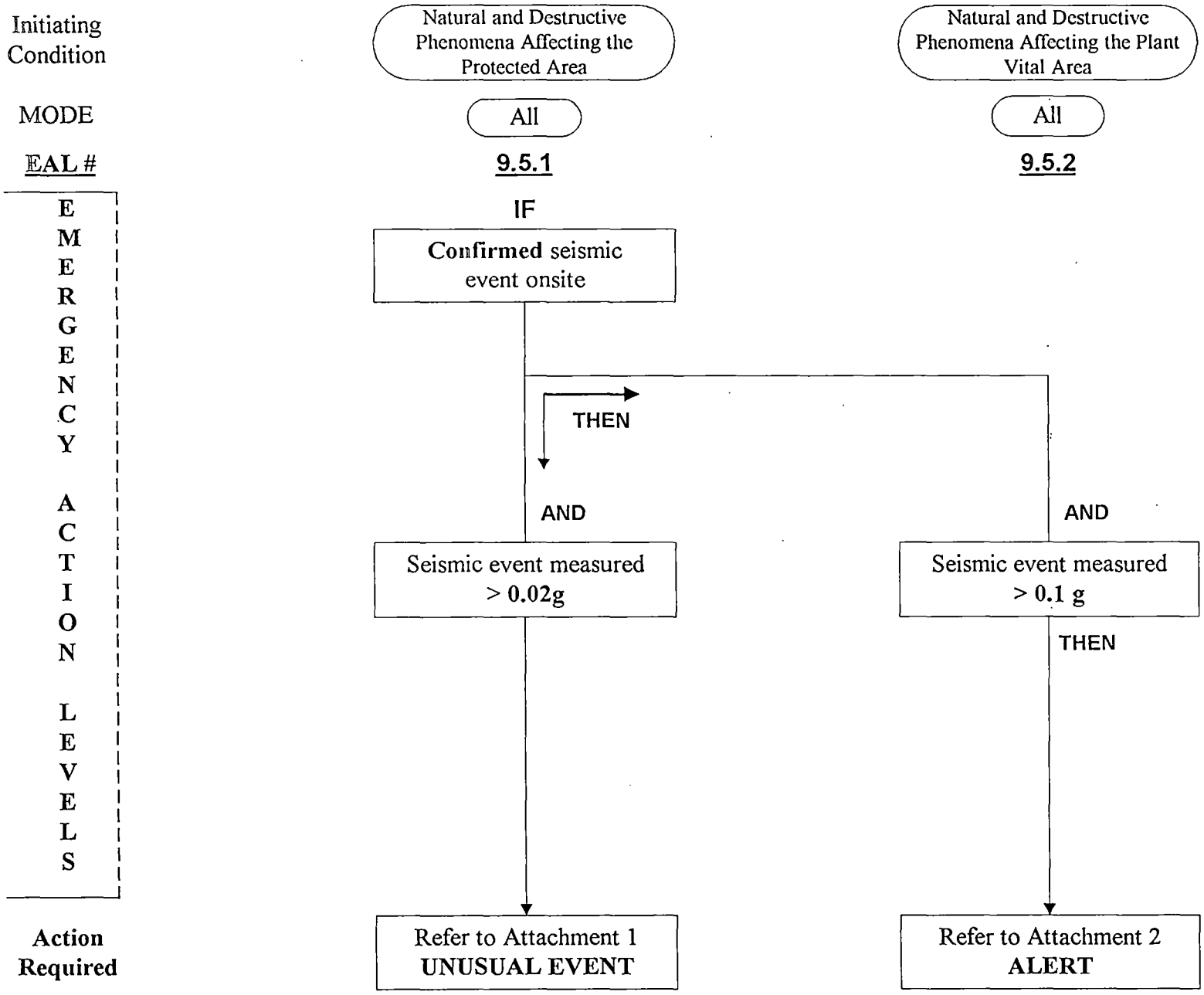
Plant personnel are unable to perform actions necessary to complete a Safe Shutdown of the plant without appropriate personnel protection equipment

THEN

EMERGENCY ACTION LEVELS

9.0 Hazards - Internal/External

9.5 Seismic Event



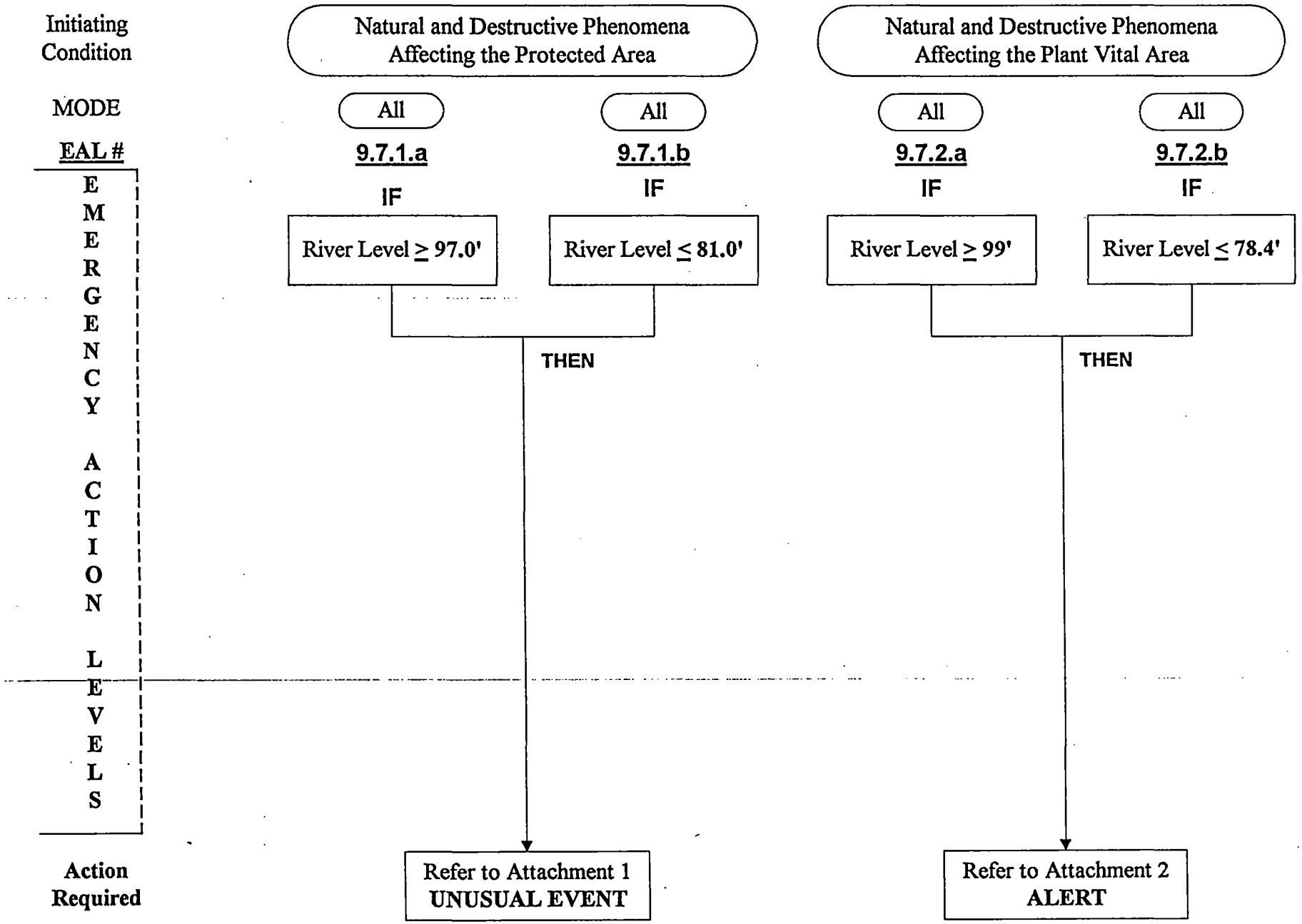
9.0 Hazards - Internal/External

9.6 High Winds

Initiating Condition	Natural and Destructive Phenomena Affecting the Protected Area		Natural and Destructive Phenomena Affecting the Plant Vital Area
MODE	All	All	All
EAL #	9.6.1.a IF	9.6.1.b IF	9.6.2
EMERGENCY ACTION LEVELS	Report of a Tornado TOUCHING DOWN within the Protected Area	**Sustained** wind speeds **> 70 MPH** from ANY elevation of the Met Tower	The Wind Speed is of a magnitude that it SPECIFICALLY results in **Damage** to ANY of the following: • TWO OR MORE Trains of a **Safety System** • MORE THAN ONE **Safety System** • Rendering ANY of the following structures incapable of performing its Design Function: * Auxiliary Building * Service Water Intake Structure * Control Point Area * Inner/Outer Penetration Areas * Containment * Fuel Handling Building * Service Building * RWST, PWST,and AFWST Area
		AND	AND
	THEN		Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation
			THEN
Action Required	Refer to Attachment 1 **UNUSUAL EVENT**		Refer to Attachment 2 **ALERT**

9.0 Hazards - Internal/External

9.7 River Level



9.0 Hazards - Internal/External

9.8 Flooding

Initiating Condition	Internal Flooding in Excess of Sump Handling Capability Affecting Safety Related Areas of the Plant	Internal Flooding Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown
MODE	All	All
EAL #	9.8.1	9.8.2
EMERGENCY ACTION LEVELS	IF	IF
	Severe Flooding of Safety System Areas HAS ENDANGERED safety related equipment per OP-AB.ZZ-0002	Visual Observation of Flooding within ANY one of the following Plant Vital Structures: • Auxilary Building • Service Water Intake Structure • Fuel Handling Building • Service Building • Containment AND The Flooding is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following: • TWO OR MORE Trains of a **Safety Syetem** • MORE THAN ONE **Safety System** • Any of the above listed Plant Vital Structures which renders the structure incapable of performing its Design Function AND Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation THEN
Action Required	Refer to Attachment 1 **UNUSUAL EVENT**	Refer to Attachment 2 **ALERT**

9.0 Hazards - Internal/External

9.9 Turbine Failure / Vehicle - Missile Impact

Initiating Condition: Natural and Destructive Phenomena Affecting the Protected Area

MODE: 1,2,3

EAL # 9.9.1.a

IF

Catastrophic damage to the Main Turbine as evidenced by EITHER one of the following:

- Main Turbine casing penetration
- Main Turbine/Generator Damage potentially releasing Lube Oil or Hydrogen Gas to the Turbine Building

THEN

MODE: All

EAL # 9.9.1.b

IF

Vehicle Crash / Missile Impact with or within ANY one of the following Structures:

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

THEN

MODE: All

EAL # 9.9.2

IF

The **Vehicle Crash / Missile Impact** is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:

- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE **Safety System**
- Any of the above Plant Vital Structures which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

THEN

EMERGENCY ACTION LEVELS

Action Required

Refer to Attachment 1
UNUSUAL EVENT

Refer to Attachment 2
ALERT

11.0 Reportable Action Levels

11.1 Technical Specifications

Initiating Condition	INITIATION OF ANY UNIT SHUTDOWN REQUIRED BY THE TECHNICAL SPECIFICATIONS [10CFR50.72(b)(1)(i)(A); 10CFR50.36(c)(1)]	EXCEEDING ANY TECHNICAL SPECIFICATION SAFETY LIMIT [10CFR50.72(b)(1)(i)(A); 10CFR50.36(c)(1)]	ANY DEVIATION FROM T/S OR LICENSE CONDITION PURSUANT TO 10CFR50.54(x) [10CFR50.72(b)(1)(i)(B)]
MODE	1, 2	1, 2, 3, 4, 5	All
RAL #	11.1.1.a	11.1.1.b	11.1.1.c
REPORTING ACTION LEVELS	IF	IF	IF
	Unit shutdown is INITIATED to comply with Technical Specifications	Exceeding EITHER one of the following Technical Specification Safety Limits: • T/S 2.1.1 Power,Pressure, Temperature combination • T/S 2.1.2 RCS Pressure	Action required because no action consistent with Technical Specifications or license can provide adequate or equivalent protection in an emergency (see NC.NA-AP.ZZ-0005(Q) for guidance on deviation from procedures) NOTE: Such action must be approved by at least a licensed SRO
		THEN	
Action Required		Refer to Attachment 12 1 Hour Report	

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTING ACTION LEVELS

Initiating Condition	STEAM GENERATOR TUBE INSPECTIONS WHICH FALL INTO CATEGORY C-3 THAT HAVE BEEN EVALUATED FOR REPORTABILITY [10CFR50.72(b)(2)(i);T/S 4.4.5.2(6.2)]	ABNORMAL DEGRADATION OF THE CONTAINMENT STRUCTURE DETECTED DURING SHUTDOWN THAT HAS BEEN EVALUATED FOR REPORTABILITY [10CFR50.72(b)(2)(i); T/S 4.6.1.6.2]
MODE	5, 6, Defueled	3, 4, 5, 6, Defueled
RAL #	**11.1.2.a**	**11.1.2.b**
	IF	IF
	Results of SG tube inspections which fall into category C-3 of T/S 4.4.5.2 (Unit 1) or T/S 4.4.6.2 (Unit 2)	Any abnormal degradation of the Containment structure detected by visual inspection of exposed accessible interior and exterior surfaces during shutdown
	AND	AND
	An engineering evaluation has determined that it is reportable pursuant to 10CFR50.72(b)(2)(i)	An engineering evaluation has determined that it is reportable pursuant to 10CFR50.72(b)(2)(i)
	THEN	
Action Required	Refer to Attachment 14 4 Hour Report	

11.0 Reportable Action Levels

11.1 Technical Specifications

Initiating Condition	VIOLATION OF THE REQUIREMENTS CONTAINED IN THE OPERATING LICENSE [Salem U2 Operating License, Sections 2.I]	ANY EVENT REQUIRING AN ENGINEERING EVALUATION BY TECH SPECS OR COMMITMENT [U1 T/S 3.4.9.1, 3.4.9.2, 3.4.7, 3.7.9, JAN 1983, LTR TO NRC, 3.7.2.1] [U2 T/S 3.4.10.1, 3.4.10.2, 3.4.8, 3.7.9, JAN 1983, LTR TO NRC, 3.7.2]
MODE	All	All
RAL #	11.1.3.a	11.1.3.b
REPORTING ACTION LEVELS	IF Violation of the requirements contained in Section 2.C (Items 3 through 25) or Section 2E, 2F or 2G of the Salem Unit 2 Operating License	IF As judged by the SNSS/EDO, ANY one of the following conditions have been satisfied: • Any of the T/S LCOs for RCS or PZR heatup or cooldown rates **are exceeded** • The concentration of either chloride or fluoride in the RCS is in excess of its Steady State Limit for **more than 24 hours** or **in excess of its Transient Limit**, thereby requiring an engineering evaluation to determine the effects of the out of limit condition on the structural integrity of the RCS • **One or more** snubbers are found to be INOPERABLE and have been replaced or restored to an OPERABLE status, an engineering evaluation shall be performed per T.S. 4.7.9c • Any PZR code safety valve **discharges** • The temperature of either the primary or secondary coolant in any steam generator is ≤ 70° F when the pressure of either the primary or secondary coolant in the Steam Generator is > **200 psig**
Action Required	Refer to Attachment 20 24 Hour Report	Refer to Attachment 22 OTHER Report

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

REPORTING ACTION LEVELS

Initiating Condition	ANY EVENT OR CONDITION DURING OPERATION THAT RESULTS IN THE CONDITION OF THE PLANT BEING SERIOUSLY DEGRADED [10CFR50.72(b)(1)(ii)]	PIPE CRACKS IN STAGNANT BORATED WATER SYSTEMS [IE Bulletin 79-17]
MODE	1,2	ALL
RAL #	11.2.1.a	11.2.1.b
	IF	IF
	As judged by the SNSS/EDO, an event or condition found during plant operations that results in ANY one of the following: • The condition of the plant, including its principle safety barriers, being seriously degraded. • The plant being in an unanalyzed condition that significantly compromises plant safety. • The plant being in a condition outside the design basis of the plant. • The plant being in a condition not covered by normal/abnormal or emergency operating procedures.	Cracks in weld areas of Borated Safety Related piping (as reported by Engineering or ISI/MIENT)
	THEN	
Action Required	Refer to Attachment 12 1 Hour Report	

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

Initiating Condition	ANY EVENT FOUND WHILE SHUTDOWN THAT WOULD HAVE SERIOUSLY DEGRADED THE PLANT OR RESULTED IN BEING IN AN UNANALYZED CONDITION [10CFR50.72(b)(2)(i)]	EVENT/CONDITION THAT ALONE COULD HAVE PREVENTED CERTAIN SAFETY FUNCTIONS [10CFR50.72(b)(2)(iii)]	PRESENCE OF A LOOSE PART IN THE REACTOR COOLANT SYSTEM [Reg. Guide 1.133]
MODE	3,4,5,6	All	All
RAL #	11.2.2.a	11.2.2.b	11.2.2.c
REPORTING ACTION LEVELS	IF Any event, found while the Reactor is shutdown, that, if had it been found during operation, would have resulted in the plant, including its principle safety barriers being in EITHER one of the following conditions: • Seriously degraded • In an unanalyzed condition that significantly compromises plant safety	IF Any event or condition that **alone could have prevented** the fulfillment of the safety function of structures or systems that are needed to perform ANY one of the following: • Control the release of radioactive material • Shutdown the reactor and maintain it in a safe shutdown condition • Remove residual heat • Mitigate the consequences of an accident	IF Presence of a Loose Part in the RCS is **confirmed**
Action Required	THEN Refer to Attachment 14 4 Hour Report		

11.0 Reportable Action Levels

11.3 Engineered Safety Features (ESF)

REPORTING ACTION LEVELS

Initiating Condition	Any Event that results or should have resulted in ECCS Discharge into the RCS as the result of a **Valid** signal [10CFR50.72(b)(2)(ii)]	ACTUATION OF ENGINEERED SAFETY FEATURE (INCLUDING THE REACTOR PROTECTION SYSTEM) EXCEPT PREPLANNED [10CFR50.72(b)(2)(ii)]
MODE	All	All
RAL #	**11.3.1**	**11.3.2**
	IF	**IF**
	Valid ECCS Actuation, Manual or Automatic, has or should have occurred	Any event or condition that results in manual or automatic actuation of any Engineered Safety Feature (ESF), except as part of a preplanned sequence during operation or testing, including the Reactor Protection System (RPS) (Manual or Automatic Scram)
	AND	**AND**
	ECCS Actuation resulted in or should have resulted in, discharged to the vessel	ESF / RPS Actuation is determined to be reportable in accordance with NC.NA-AP-0006(Q)
	THEN	**THEN**
Action Required	Refer to Attachment 12 1 Hour Report	Refer to Attachment 14 4 Hour Report

11.0 Reportable Action Levels

11.4 Personnel Safety / Overexposure

Initiating Condition	ANY INCIDENT OR EVENT INVOLVING BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL CAUSING ANY OF THE LISTED RESULTS[10CFR20.2202(a)(1)]	ANY INCIDENT OR EVENT INVOLVING BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL CAUSING ANY OF THE LISTED RESULTS [10CFR20.2202(b)(1)]	ONSITE FATALITY [10CFR50.72(b)(2)(vi)]
MODE	All	All	All
RAL #	11.4.1	11.4.2.a	11.4.2.b
REPORTING ACTION LEVELS	IF PERSONNEL OVEREXPOSURE or potential for overexposure as indicated by ANY one of the following: • **TEDE** exposure ≥ **25 REM** • **LDE** exposure ≥ **75 REM** • **SDE** exposure ≥ **250 REM** • Release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥ **5** times the occupational ALI (annual limit of intake) which would usually equate to **25 Rem CEDE**. This applies to areas where personnel are not normally stationed during routine operations	IF PERSONNEL OVEREXPOSURE or potential for overexposure as indicated by ANY one of the following: • **TEDE** exposure ≥ **5 REM** • **LDE** exposure ≥ **15 REM** • **SDE** exposure ≥ **50 REM** • Release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥ **1** times the occupational ALI (annual imit of intake) which would usually equate to **5 Rem CEDE**. This applies to areas where personnel are not normally stationed during routine operations	IF Any fatality has occurred onsite (within the owner controller area)
	THEN	THEN	THEN
Action Required	Refer to Attachment 12 1 Hour Report	Refer to Attachment 14 4 Hour Report	Refer to Attachment 17 4 Hour Report

11.0 Reportable Action Levels

11.4 Personnel Safety / Overexposure

REPORTING ACTION LEVELS

Initiating Condition	CONTAMINATED INJURED PERSON TRANSPORTED FROM THE SITE TO AN OFFSITE MEDICAL FACILITY [10CFR50.72(b)(2)(v)]	SIGNIFICANT FITNESS FOR DUTY EVENTS [10CFR26.73(a)]
MODE	All	All
RAL #	11.4.2.c	11.4.3
	IF	IF
	Transportation of a contaminated or **potentially contaminated individual** from the site to an offsite medical facility	Any event that is determined to be reportable by the Medical Review Officer (MRO) or designee I.A.W. PSE&G's Fitness for Duty Program (NC-NA-AP.ZZ-0042(Q))
	THEN	AND
		The Reportable details of the event are made available to the SNSS by the MRO or designee.
		THEN
Action Required	Refer to Attachment 14 4 Hour Report	Refer to Attachment 19 24 Hour Report

11.0 Reportable Action Levels

11.5 Environmental

Initiating Condition	SPILL/DISCHARGE OF ANY NON-RADIOACTIVE HAZARDOUS SUBSTANCE [10CFR50.72(b)(2)(vi); N.J.A.C. 7:1E]	SPILL/DISCHARGE OF ANY NON-RADIOACTIVE HAZARDOUS SUBSTANCE INTO OR UPON THE RIVER [10CFR50.72(b)(2) (vi); N.J.A.C.7:1E]	UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS [E.P.P. SECTION 4.1]
MODE	All	All	All
RAL #	11.5.2.a	11.5.2.b	11.5.2.c
REPORTING ACTION LEVELS	IF Spill/discharge of an industrial chemical or petroleum product outside of a plant structure within the owner controlled area that results in EITHER one of the following: • Spill / discharge that has passed through the **engineered fill** and into the **ground water** as confirmed by licensing • Spill / discharge that CANNOT be cleaned up within **1 hour** and no contact with groundwater is suspected NOTES: This event MAY require immediate (15 minute) notifications. Do not delay implementation of Attachment 16. Contact licensing per ECG Attachment 9 for guidance concerning reportability as necessary.	IF EITHER one of the following events occur: • Observation of a spill/discharge of an industrial chemical or petroleum product from on-site into the Delaware River or into a storm drain • Observation of an oil slick on the Delaware River which may have originated from Salem or Hope Creek Station. NOTES: This event WILL require immediate (15 minute) notifications. Do not delay implementation of Attachment 16. Contact licensing per ECG Attachment 9 for guidance concerning reportability as necessary.	IF As judged by the SNSS/EDO, ANY one of the following events has occurred: • Unusually large fish kill • Protected aquatic species impinge on Circulating or Service Water intake screens (ex.; sea turtle, sturgeon) as reported by Site personnel • Any occurrence of an unusual or important event that indicates or could result in significant environmental impact casually related to plant operation; such as the following: * Onsite plant or animal disease outbreaks * Mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973 * Increase in nuisance organisms or conditions * Excessive bird impactation
	THEN	THEN	THEN
Action Required	Refer to Attachment 16 Spill/Discharge Reporting	Refer to Attachment 16 Spill/Discharge Reporting	Refer to Attachment 15 Spill/Discharge Reporting

11.0 Reportable Action Levels

11.6 After-the-Fact

Initiating Condition

MODE

RAL #

REPORTING ACTION LEVELS

Action Required

EMERGENCY CONDITIONS DISCOVERED AFTER-THE-FACT

All

11.6.1

IF

Discovery of events or conditions that had previously occurred (event was NOT ongoing at the time of discovery) which EXCEEDED an Emergency Action Level (EAL) and was NOT declared as an emergency

AND

There are currently NO adverse consequences in progress as a result of the event

THEN

Refer to Attachment 12
1 Hour Report

11.0 Reportable Action Levels

11.7 Security / Emergency Response Capabilities

Initiating Condition	SAFEGUARDS EVENTS THAT ARE DETERMINED TO BE NON-EMERGENCIES BUT ARE REPORTABLE TO THE NRC WITHIN ONE HOUR [10CFR73.71(b)(1)]	MAJOR LOSS OF EMERGENCY ASSESSMENT CAPABILITY, OFFSITE RESPONSE CAPABILITY, OR COMMUNICATIONS CAPABILITY [10CFR50.72(b)(1)(v))]
MODE	All	All
RAL #	11.7.1.a	11.7.1.b
REPORTING ACTION LEVELS	IF Any Non-Emergency safeguards event that is reportable in accordance with 10CFR73.71 as determined by Security (SCP-15) THEN	IF SNSS/EC determines that an event (excluding a scheduled test or preplanned maintenance activity) has occurred that would impair the ability to deal with an accident or emergency as indicated by the Loss of ANY one of the following: • Emergency Phone System (NETS) for **>1 hour** • P250 or Aux Annunciator System for **> 24 hours** • SPDS for **> 8 hours** (> 2 CFSTs Inop) • ENS for **>1 Hour** in the Control Room, or TSC, or EOF(n/a if reported to PSE&G by the NRC) • Greater than or equal to eight Offsite sirens for **> 1 Hour** • Use of the TSC or EOF for **> 8 hours** • All Meteorological data (Salem AND Hope Creek) for **> 8 hours** • Site access due to Acts of Nature (snow, flood, etc.) • ALL Plant vent radiation effluent monitors for **> 8 hours** • All or most (> 75%) OHA's for **< 15 minutes** • Concurrent multiple accident or emergency condition indicators which in the judgement of the SNSS significantly impairs assessment capabilities THEN
Action Required	Refer to Attachment 11 1 Hour Report	Refer to Attachment 12 1 Hour Report

11.0 Reportable Action Levels

11.8 Public Interest

REPORTING ACTION LEVELS

Initiating Condition	UNUSUAL CONDITIONS WARRANTING A NEWS RELEASE OR NOTIFICATION OF GOVERNMENT AGENCIES [10CFR50.72(b)(2)(vi)]	UNUSUAL CONDITIONS DIRECTLY AFFECTING LOWER ALLOWAYS CREEK TOWNSHIP (LACT) [LAC -MOU]
MODE	All	All
RAL #	11.8.2.a	11.8.2.b
	IF	IF
	SNSS/EDO judges that an event or situation has occurred that is related to ANY one of the following: • The health and safety of the public • The health and safety of onsite personnel • Protection of the environment	As judged by the SNSS/EDO, events which are the responsibility of PSE&G which have or may result in EITHER one of the following: • Anticipated unusual movement of equipment or personnel which may significantly affect local traffic patterns • Onsite events which involve alarms, sirens or other noise which may be heard off-site
	AND: A news release is planned AND: Notifications to a Local, State or Federal agency has been or will be made	THEN
	THEN	
Action Required	Refer to Attachment 14 4 Hour Report	Refer to Attachment 21 LACT / MOU Report

11.0 Reportable Action Levels

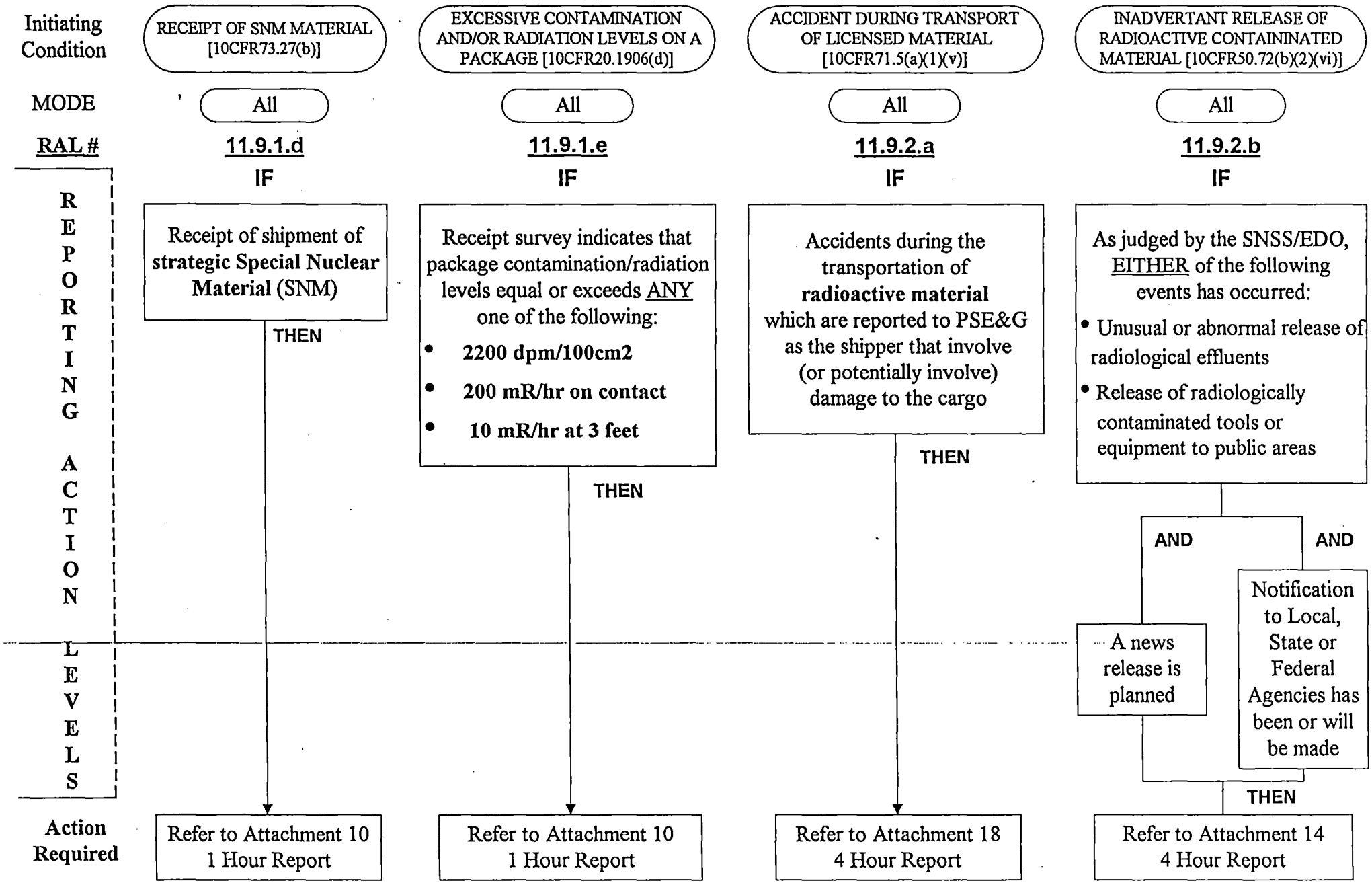
11.9 Accidental Criticality / Special Nuclear Material / Rad Material Shipments - Releases

REPORTING ACTION LEVELS

Initiating Condition	UNPLANNED / ACCIDENTAL CRITICALITY [10CFR70.52(a)]	LOSS AND INVESTIGATION OF THE LOSS OF SPECIAL NUCLEAR MATERIALS/ SPENT FUEL [10CFR73.27(c), 10CFR73.71(a)]	THEFT OR LOSS OF LICENSED MATERIAL [10CFR20.2201(a)(1)(i)]
MODE	2, 3, 4, 5	All	All
RAL #	11.9.1.a	11.9.1.b	11.9.1.c
IF	Any unplanned or accidental criticality	ANY one of the following events occur involving SNM or Spent Fuel: • Shipment of Special Nuclear Material (SNM) or Spent Fuel that is lost or Unaccounted for after the estimated time of arrival • A lost or unaccounted for shipment of SNM or Spent Fuel has been recovered or accounted for • Results of a trace investigation of lost or unaccounted for SNM shipment are received	Lost, stolen or missing licensed material > 1000 times the quantity specified in 10CFR20 Appendix C in such circumstances that an exposure could result to persons in unrestricted areas.
THEN			
Action Required	Refer to Attachment 12 1 Hour Report	Refer to Attachment 11 1 Hour Report	Refer to Attachment 11 1 Hour Report

11.0 Reportable Action Levels

11.9 Accidental Criticality / Special Nuclear Material / Rad Material Shipments - Releases



NUCLEAR
BUSINESS
UNIT

SALEM HOPE CREEK

EVENT CLASSIFICATION GUIDE

TECHNICAL BASIS

SALEM GENERATING STATION

PSEG
The Energy People

BASIS DOCUMENT

SALEM ECG

SECTIONS 1 - 11

EMERGENCY ACTION LEVELS (EALs)
&
REPORTING ACTION LEVELS (RALs)

NOTE: THIS IS A NEW DOCUMENT WHICH WILL BE SEPARATE FROM THE ECG AND USED AS A REFERENCE DOCUMENT.

BASIS DOCUMENT

FILE: COVERS.ECG

1.0 Fuel Clad Challenge

1.1 RCS Activity

UNUSUAL EVENT - 1.1.1.a/1.1.1.b

IC Fuel Clad Degradation

EAL

Reactor Coolant Activity > **1 µCi/gm Dose Equivalent I-131** for > **48 Hours** **OR** Reactor Coolant Activity (Dose Equivalent Iodine) **exceeds limits** of Technical Specification Figure 3.4-1

MODE - 1, 2, 3, 4, 5, 6

BASIS

Coolant Iodine activity **in excess** of Technical Specifications is considered to be a precursor of more serious problems. The Technical Specification Iodine limit reflects a degrading or degraded core condition. This level is above any possible short duration Iodine spikes under normal conditions.

Barrier Analysis

This event does not reach the threshold for the loss of Fuel Clad Barrier, but does affect that barrier.

ESCALATION CRITERIA

This event will be escalated to an Alert when Reactor Coolant activity exceeds 300 µCi/gm Dose Equivalent I-131 per EAL Section 3.1.2.

DISCUSSION

An Unusual Event is only warranted when actual fuel clad damage is the cause of the elevated coolant sample (as determined by RCS sample analysis confirmation). However, fuel clad damage should be assumed to be the cause of elevated Reactor Coolant activity unless another

high activity levels. The Technical Specification limit on RCS Activity of ≤ 100/Ē was not included in this EAL because it specifically excludes Iodine Activity.

DEVIATION

NUMARC requires this EAL to be applicable in all Modes of operation. Since there is no fuel in the Reactor vessel in Mode "Defueled", this EAL is not Applicable.

REFERENCES

NUMARC NESP-007, SU4.2
Technical Specification Section 3.4.8 - Unit 1
Technical Specification Section 3.4.9 - Unit 2

1.0 Fuel Clad Challenge

1.1 RCS Activity

UNUSUAL EVENT - 1.1.1.c

IC Fuel Clad Degradation

EAL

Valid Letdown Line Monitor **in Alarm** (1R31A or 2R31)

MODE - 1, 2, 3, 4, 5, 6

BASIS

The letdown monitoring system (1-R31A and 2-R31) detects the radiation concentration that is attributable to the fission products that are produced in the reactor. This indicator of elevated activity would be one of the first indicators of a degrading core, and is considered to be a precursor of more serious problems. "**Valid**" means confirmed by other indications on related or redundant instrumentation.

Barrier Analysis

This event does not reach the threshold for the loss or potential loss of the Fuel Clad Barrier, but does affect this barrier.

ESCALATION CRITERIA

This event will be escalated to an Alert when RCS activity exceeds 300 μCi/gm Dose Equivalent Iodine 131 per EAL Section 3.1.2.

DISCUSSION

A **valid** Letdown Line Monitor alarm may indicate that the failed fuel level has reached 1% due to an increased number of failed fuel elements or a fuel gap release. Sample results are not required prior to classification; however, other radiation monitors should be used to confirm this alarm to prevent inaccurate classification based on an instrument malfunction.

DEVIATION

NUMARC requires this EAL to be applicable in all Modes of operation. Since there is no fuel in the Reactor vessel in Mode "Defueled", this EAL is not Applicable.

REFERENCES

SGS-UFSAR Section 11.4
NUMARC NESP-007, SU4.1
OP-AB.RC-0002(Q)
Salem U1/U2 Radiation Monitoring System Manual

2.0 RCS Challenge

2.1 RCS Leakage

UNUSUAL EVENT - 2.1.1.a/2.1.1.b/2.1.1.c

IC RCS Leakage

EAL

Reactor Coolant System Pressure Boundary Leakage > **10 gpm** **OR** Reactor Coolant System Unidentified Leakage > **10 gpm** **OR** Reactor Coolant System Identified Leakage > **25 gpm**

MODE - 1, 2, 3, 4

BASIS

This EAL addresses plant conditions where RCS leakage significantly exceeds limits imposed by Technical Specifications. A leak of such magnitude is consistent with an Unusual Event classification and should be declared immediately. Credit for the Technical Specification Action Statement time in deferring an Emergency Classification should only be given when the leakage exceeds Technical Specification limits but has not yet exceeded the Unusual Event threshold. This EAL is included as an Unusual Event as it may be a precursor to a more serious event. As such, it is considered to be a potential degradation of the level of safety of the plant. The unidentified or pressure boundary threshold value was chosen to be readily observable from the control room using normal indications. The identified leakage threshold value is set at a higher value due to its lesser significance compared to unidentified or pressure boundary leakage. Note that identified leakage includes Primary to Secondary leakage per Technical Specification definition.

Barrier Analysis

This event does not reach the threshold for the loss of the RCS Barrier, but does affect that barrier.

ESCALATION CRITERIA

This event will be escalated to an Alert or higher classification based on a loss or potential loss of fission product barriers per EAL section 3.0.

DISCUSSION

Utilizing the leak before break methodology, it is anticipated that there will be indication(s) of minor reactor coolant system boundary leakage prior to a fault escalating to a major leak or a system rupture. Detection of low levels of leakage while pressurized permits monitoring for catastrophic failure or rupture precursors.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SU5
EOP-TRIP-1
EOP-LOCA-1
Technical Specifications Definition 1.15.c
Technical Specifications 3.4.6.2 - Unit 1
Technical Specifications 3.4.7.2 - Unit 2

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.1.a

IC Potential Loss of Fuel Clad

EAL

CORE COOLING PURPLE PATH

MODE - 1, 2, 3, 4

BASIS

Core Cooling PURPLE Path indicates that subcooling has been lost and that some clad damage may occur.

Barrier Analysis

Fuel Clad Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

Salem Generating Station replaced the CFST "Orange Path" color designation with "Purple Path" due to the limitations imposed by SPDS crt's color gun configuration.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC1
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.1.b

IC Potential Loss of Fuel Clad

EAL

HEAT SINK RED PATH

MODE - 1, 2, 3, 4

BASIS

Heat Sink RED Path indicates that Steam Generator dryout could occur. A loss of Heat Sink poses an extreme challenge to the Fuel Clad. A barrier loss classification should not be made if the Heat Sink RED is the result of procedurally required auxiliary feedwater flow control.

Barrier Analysis

Fuel Clad and RCS Barriers have been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC1
EOP-CFST-1
EOP-TRIP-1
FRHS-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.1.c

IC Loss of Fuel Clad

EAL

CORE COOLING RED PATH

MODE - 1, 2, 3, 4

BASIS

Core Cooling RED Path is definitive indication that the heat transfer from the fuel to the coolant has degraded leading to a fuel clad heatup, significant superheating and core uncovery.

Barrier Analysis

Fuel Clad Barrier has been lost and the Primary Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

DEVIATION

NONE

REFERENCES

NUMARC NESP-007, FC1
EOP-CFST-1
EOP-TRIP-1
FRCC-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.2

IC Loss of Fuel Clad

EAL

Reactor Coolant activity > **300 µCi/gm Dose Equivalent I-131**

MODE - 1, 2, 3, 4

BASIS

A reactor coolant sample activity of greater than 300 µCi/gm Dose Equivalent Iodine-131 (DEI-131) was determined to indicate significant clad heating or mechanical stress and is indicative of the loss of the fuel clad barrier. This concentration is well above that expected for iodine spikes and corresponds to approximately 2.5% clad damage.

Barrier Analysis

Fuel Clad Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

The actual value of 300 µCi/gm Dose Equivalent Iodine-131 (DEI-131) was determined based upon an engineering calculation which is not included with this EAL. This calculation was prepared by the Nuclear Fuels Group and is on file with Emergency Preparedness under file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" date 1/26/95.

DEVIATION

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.2

IC Loss of Fuel Clad

EAL

Reactor Coolant activity > **300 µCi/gm Dose Equivalent I-131**

MODE - 1, 2, 3, 4

BASIS

A reactor coolant sample activity of greater than 300 µCi/gm Dose Equivalent Iodine-131 (DEI-131) was determined to indicate significant clad heating or mechanical stress and is indicative of the loss of the fuel clad barrier. This concentration is well above that expected for iodine spikes and corresponds to approximately 2.5% clad damage.

Barrier Analysis

Fuel Clad Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

The actual value of 300 µCi/gm Dose Equivalent Iodine-131 (DEI-131) was determined based upon an engineering calculation which is not included with this EAL. This calculation was prepared by the Nuclear Fuels Group and is on file with Emergency Preparedness under file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" date 1/26/95.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC2
Reg. Guide 1.109, Table E-9
SGS-USFAR, Table 11.1-1
SGS-USFAR, Table 11.1-7
OP-AB.RC-0002(Q)
Calculation by Nuclear Fuels Group file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" date 1/26/95.

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.3.a

IC Potential Loss of Fuel Clad

EAL

5 or more CETs > 700 °F

MODE - 1, 2, 3, 4,

BASIS

The threshold value chosen is from the EOP-CFST-1 Core Cooling Status Tree and indicates a loss of core subcooling which could lead to clad damage.

Barrier Analysis

Fuel Clad Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based upon the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the EOP Critical Safety Function Tree monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. Use of core exit thermocouple temperature to indicate loss of subcooling is equivalent to the CFST Core Cooling status codes.

Salem Generating Station replaced the CFST "Orange Path" color designation with "Purple Path" due to the limitations imposed by SPDS crt's color gun configuration.

DEVIATION

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.3.a

IC Potential Loss of Fuel Clad

EAL

5 or more CETs > 700 °F

MODE - 1, 2, 3, 4,

BASIS

The threshold value chosen is from the EOP-CFST-1 Core Cooling Status Tree and indicates a loss of core subcooling which could lead to clad damage.

Barrier Analysis

Fuel Clad Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based upon the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the EOP Critical Safety Function Tree monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. Use of core exit thermocouple temperature to indicate loss of subcooling is equivalent to the CFST Core Cooling status codes.

Salem Generating Station replaced the CFST "Orange Path" color designation with "Purple Path" due to the limitations imposed by SPDS crt's color gun configuration.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC3
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.3.b

IC Loss of Fuel Clad

EAL

5 or more CETs > 1200 ° F

MODE - 1, 2, 3, 4,

BASIS

Five Core Exit Thermocouple temperatures > 1200 °F indicates a significant superheating of the reactor coolant.

Barrier Analysis

Fuel Clad Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The EAL threshold of > 1200 °F is equivalent to CFST Core Cooling RED.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC3
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.4.a

IC Potential Loss of Fuel Clad

EAL

RVLIS Full Range < 50%

MODE - 1, 2, 3, 4

BASIS

The threshold value of RVLIS Full Range < 50% is chosen from the EOP-CFST-1 Core Cooling Status Tree. This value approximates the "Top of Active Fuel" which is a water level at which clad damage may be expected to occur.

Barrier Analysis

Fuel Clad Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based upon the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the EOP Critical Safety Function Tree monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. Use of RVLIS to indicate reactor vessel water level is more specific than the CFST Core Cooling status codes. Full Range RVLIS indicates reactor vessel water level with no RCPs running. The intent of this EAL is to provide a RVLIS level which approximates core uncovery. The actual RVLIS level which indicates "top of active fuel" is somewhat higher than 50%; however, 50% was adopted to be consistent with the CFST value.

Salem Generating Station replaced the CFST "Orange Path" color designation with "Purple Path" due to the limitations imposed by SPDS crt's color gun configuration.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC4
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.4.b

IC Potential Loss of Fuel Clad

EAL

RVLIS Dynamic Range Indicates ANY one of the following:
- 4 RCPs I/S < **44%**
- 3 RCPs I/S < **30%**
- 2 RCPs I/S < **20%**
- 1 RCP I/S < **13%**

MODE - 1, 2, 3, 4

BASIS

The threshold values for RVLIS Dynamic Range levels with various combinations of RCPs is chosen from the EOP-CFST-1 Core Cooling Status Tree. These values correspond to a 50% void fraction which may result in clad damage.

Barrier Analysis

Fuel Clad Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based upon the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the EOP Critical Safety Function Tree (CSFT) monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. Use of RVLIS to indicate reactor vessel water level is more specific than the CFST Core Cooling Purple Path status codes. Dynamic Range RVLIS indicates reactor vessel water level when at least 1 RCP is

running. The intent of this EAL is to provide a RVLIS level which approximates a 50% RCS void fraction. With this void fraction, a loss of all operating RCPs could lead to core uncovery.

Salem Generating Station replaced the CFST "Orange Path" color designation with "Purple Path" due to the limitations imposed by SPDS crt's color gun configuration.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC4
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.5

IC Loss of Fuel Clad

EAL

R44A or R44B > **300 R/hr**

MODE - 1, 2, 3, 4

BASIS

The reading of 300 R/hr on the containment high range monitor (R44A or R44B) indicates the loss of the Fuel Clad fission product barrier. The reading was calculated assuming an instantaneous release of the Reactor Coolant volume into the Primary Containment at a coolant concentration of 300 μCi/gm Dose Equivalent Iodine 131. This value is much larger than Technical Specification allowed Iodine spikes and corresponds to fuel clad damage of approximately 2.5%.

Barrier Analysis

Fuel Clad and RCS Barriers have been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based upon the loss or potential loss of additional barriers per EAL section 3.0

DISCUSSION

This calculation is based upon a calculation of 300 μCi/gm Dose Equivalent Iodine 131 as it relates to R44 measured Dose Rate values. This calculation was prepared by the Nuclear Fuels Group and is on file with Emergency Preparedness under file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" date 1/26/95.

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC5
Calculation by Nuclear Fuels file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification

3.0 Fission Product Barriers

3.1 Fuel Clad Barrier

3.1.6

IC Potential Loss or Loss of Fuel Clad Barrier

EAL

Any condition, in the opinion of the EC, that indicates a potential loss (3 pts) or loss (4 pts) of the Fuel Clad Barrier

MODE - 1, 2, 3, 4

BASIS

This EAL allows the Emergency Coordinator to address any factor not otherwise covered in the Fission Product Barrier Table to determine that the Fuel Clad barrier has been lost or potentially lost. A complete loss in the ability to monitor the Fuel Clad barrier should be considered a "Potential Loss" of that barrier. Classification under this "EC Judgement" EAL should not be used if specific threshold values are given for the plant conditions being considered for Emergency Classification.

Barrier Analysis

The Fuel Clad Barrier has been lost or potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the loss or potential loss of additional barriers per EAL section 3.0.

DISCUSSION

None

DEVIATION

None

REFERENCES

NUMARC NESP-007, FC7

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.1.a

IC Potential Loss of RCS

EAL

THERMAL SHOCK RED PATH

MODE - 1, 2, 3, 4

BASIS

Thermal Shock RED path indicates an excessive RCS cooldown has occurred and that RCS pressure and temperature conditions have resulted in significant Pressurized Thermal Shock concerns.

Barrier Analysis

RCS Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC1
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.1.b

IC Potential Loss of RCS

EAL

HEAT SINK RED PATH

MODE - 1, 2, 3, 4

BASIS

Heat Sink RED Path indicates that Steam Generator dryout could occur. A loss of Heat Sink poses an extreme heat removal challenge to the RCS. A barrier loss classification should not be made if the Heat Sink RED is the result of procedurally required auxiliary feedwater flow control.

Barrier Analysis

Fuel Clad and RCS Barriers have been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC1
EOP-CFST-1
EOP-TRIP-1
FRHS-1

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.2.a

IC Potential Loss of RCS

EAL

One Centrifugal Charging Pump CANNOT maintain PZR level > **17%** with letdown secured (as a result of RCS leakage).

MODE - 1, 2, 3, 4

BASIS

RCS leakage which results in an inability to maintain Pressurizer Level with a normal Charging lineup using one centrifugal charging pump is indicative of an RCS inventory loss which would require initiation of SI and entry into EOP-TRIP-1 from OP-AB.RC-0001(Q), Reactor Coolant System Leak. Non-RCS leakage events (such as steam/feedwater system breaks) where no mass is lost from the RCS should not be classified under this EAL.

Barrier Analysis

RCS Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Significant leakage from the RCS will result in implementation of OP-AB.RC-0001(Q). Actions required by this procedure will result in one centrifugal charging pump in service, discharging to the charging header, and letdown secured. If Pressurizer Level cannot be maintained stable or increasing with this lineup established, a manual Safety Injection will be initiated. This EAL

assumes that any event that would result in significant RCS mass loss will result in at least an ALERT declaration.

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC2
EOP-TRIP-1
EOP-FRCE-1
OP-AB.RC-0001(Q)

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.2.b

IC Loss of RCS

EAL

Subcooling **< 10 °F** as a result of RCS leakage

MODE - 1, 2, 3, 4

BASIS

This EAL attempts to classify a "Loss" of the RCS Barrier due to LOCA conditions. Non-RCS leakage events (such as steam/feedwater system breaks) where no mass is lost from the RCS should not be classified under this EAL. Subcooling < 10 °F is indication that leakage from the RCS boundary is greater than the available inventory control capacity. The loss of subcooling signifies that the inventory control systems are inadequate to maintain RCS pressure and inventory against the mass loss through the leak. Loss of subcooling due to, or as a result of, EOP directed operator actions do not require classification under this EAL.

Barrier Analysis

RCS Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Status Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the

ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

The EAL threshold of < 10 °F is reached by CFST Core Cooling YELLOW or Continuous Action Summary (CAS) monitoring. It is not intended to use this EAL for Primary to Secondary leakage (SGTR) events since adequate injection capability should exist for all ranges of these events. EOP directed actions resulting in deliberate subcooling reduction (e.g. during SGTR saturated recovery), steam/feedwater line breaks, or momentary reductions below 10°F that are recoverable (e.g. SI flow reduction sequence) should not be classified under this EAL.

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC2
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.3.a

IC Potential Loss of RCS

EAL

One Centrifugal Charging Pump CANNOT maintain PZR level > **17%** with letdown secured (as a result of a **SGTR**) **AND** Control Room has determined that an **SGTR** has occurred

MODE - 1, 2, 3, 4

BASIS

This EAL is indicative of a Loss of RCS from a Steam Generator Tube Rupture. Non-RCS leakage events (such as steam/feedwater system breaks) where no mass is lost from the RCS should not be classified under this EAL. The threshold values for determining a Steam Generator Tube Rupture (**SGTR**) are those used in the EOP network. Inability to maintain Pressurizer Level with a normal Charging lineup is indicative of a SGTR that would require initiation of SI and entry into EOP-TRIP-1.

Barrier Analysis

RCS Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

It is understood that this EAL is redundant to the RCS leakage EAL. Inclusion of this EAL ensures that significant SG tube leakage will be classified consistent with RCS leakage. Known SG tube

leakage will result in implementation of OP-AB.SG-0001(Q). Actions required by this procedure may result in a manual Safety Injection initiation and entry into the EOP network. This EAL assumes that any SGTR that results in significant RCS mass loss will result in at least an ALERT classification.

For Ruptured SGs that are also faulted, further evaluation of the Containment Barrier is required. For faults that occur inside of Containment, this "Potential Loss" EAL will serve as the correct classification as long as no Containment challenges occur. For faults which occur outside the Containment, the RCS SGTR "Loss" EAL must also be considered.

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC3
EOP-SGTR-1
S1(2).OP-AB.SG-0001(Q)

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.3.b

IC Loss of RCS

EAL

One Centrifugal Charging Pump CANNOT maintain PZR level **>17%** with letdown secured (as a result of a SGTR) **AND** Ruptured Steam Generator pressure is **decreasing in an uncontrolled manner or completely depressurized** **AND** **Prolonged, direct secondary leakage to the environment**

MODE - 1, 2, 3, 4

BASIS

This EAL is indicative of a loss of RCS inventory due to a Steam Generator Tube Rupture and the Ruptured SG is also Faulted outside containment. The threshold values for determining that a Steam Generator Tube Rupture exist are those used in the EOP network. This condition results in a prolonged, direct release of radioactive fission and activation products to the environment. This EAL excludes SG depressurization events that are a direct result of EOP directed operator action. The term "**decreasing in an uncontrolled manner**" is defined consistent with the EOP definition of a faulted S/G. A "**prolonged**" release is defined as an unisolable rupture (excluding minor valve leakage) of a steam or feed line outside of containment, or a stuck open relief valve on the ruptured SG. The term "**direct secondary leakage to the environment**" is intended to include all flowpaths of contaminated secondary coolant to the environment either directly or via systems which exhaust to the Plant Vent (e.g.; leakage to the Auxiliary Building ventilation system) with the following exception: If the EOPs require steaming the ruptured SG to the main condenser, the condenser off-gas (R15) pathway is excluded from this EAL provided the release is both controlled and monitored.

Barrier Analysis

RCS and Containment Barriers have been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

This "Loss" EAL addresses Ruptured SGs with an unisolable fault outside of Containment. This EAL is used in conjunction with the Containment Barrier Bypass "Loss" EAL and will always result in a loss of the Containment Barrier. Ruptured SGs that are faulted inside the Containment are excluded from this EAL. This EAL excludes classification based on a depressurization that results from an EOP induced cooldown of the RCS that does not involve prolonged release of contaminated secondary coolant from the affected SG to the environment. Releases which reach the environment via the Plant Vent should also be classified under this EAL.

DEVIATIONS

None

REFERENCES

NUMARC NESP-007, RC3
EOP-SGTR-1
S1(2).OP-AB.SG-0001(Q)

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.4

IC Loss of RCS

EAL

Valid Containment Radiation level which exceeds ANY one of the following Containment Rad Monitors values: • R2 > 1 R/hr • R44A > 10 R/hr • R44B > 10 R/hr

MODE - 1, 2, 3, 4

BASIS

A reading of >1 R/hr on Containment Rad Monitor R2 is the preferred method of classification under this EAL. The measurement scales on R2 range from .1 mR/hr to 10 R/hr thus providing reasonable accuracy for this threshold value. The term "**valid**" was added specifically for the R44 detectors as they are log scale detectors scaled only in R/hr and are extremely inaccurate at this low value. This reading is less than that specified for the Fuel Clad Barrier since this EAL attempts to identify RCS leakage assuming RCS activity at the Technical Specification limit. Classification under this EAL should not be made based upon crud burst evolutions or other non-RCS leakage events.

Barrier Analysis

RCS Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the loss or potential loss of additional barriers per EAL section 3.0.

DISCUSSION

The R44A/B detectors were included in this EAL to ensure that classification of an RCS "loss" would occur for events which result in significant R/hr readings on these high range detectors which "over scale" the R2 detector. It is understood that these detectors are incapable of accurately reading 1 R/hr due to their log function (with 1 R/hr being the setpoint for coming "off the lower peg").Therefore the EAL threshold value for these monitors has been increased to 10 R/hr which corresponds to the upper range of the R2 monitor.

The threshold value of 1 R/hr for the R2 monitor was calculated assuming an instantaneous release of the Reactor Coolant volume into the Primary Containment at a coolant concentration of 1.0 μCi/gm (Technical Specification limit). This calculation was prepared by the Nuclear Fuels Group and is on file with Emergency Preparedness under file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" dated 1/26/95. This RAD monitor value is to be used as a backup indication to other systems designed to measure RCS leakage.

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC4
Calculation by Nuclear Fuels Group file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" dated 1/26/95.

3.0 Fission Product Barriers

3.2 RCS Barrier

3.2.5

IC Potential Loss or Loss of RCS

EAL

Any condition, in the opinion of the EC, that indicates a potential loss (3 pts) or loss (4 pts) of the RCS Barrier

MODE - 1, 2, 3, 4

BASIS

This EAL allows the Emergency Coordinator to address any factor not otherwise covered in the Fission Product Barrier Table to determine that the RCS barrier has been lost or potentially lost. A complete loss in the ability to monitor the RCS barrier should be considered a "Potential Loss" of that barrier. Classification under this "EC Judgement" EAL should not be used if specific threshold values are given for the plant conditions being considered for Emergency Classification.

Barrier Analysis

The RCS Barrier has been potentially lost or lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

None

DEVIATION

None

REFERENCES

NUMARC NESP-007, RC6

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.1.a

IC Potential Loss of Containment

EAL

CNTMT ENVIRONMENT RED PATH

MODE - 1, 2, 3, 4

BASIS

Containment Environment RED Path results from RCS barrier loss or a faulted S/G and signifies that breach of the Primary Containment is imminent. For this condition, all Containment isolations, as well as automatic Containment Spray and CFCU "low speed" operation should be initiated before this threshold is reached.

Barrier Analysis

Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room. Although the yield strength of the Primary Containment may be much higher that 47 psig, for the purposes of event classification, the barrier is considered potentially lost at that value. Thus, this EAL is primarily a discriminator between a Site Area Emergency and a General Emergency, representing a potential loss of the third barrier..

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC1
EOP-CFST-1
EOP-TRIP-1
EOP-FRCE-1

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.1.b

IC Potential Loss of Containment

EAL

CORE COOLING RED PATH for > 15 minutes

MODE - 1, 2, 3, 4

BASIS

Core Cooling RED Path represents an imminent melt sequence which if not corrected could lead to vessel failure and an increased potential for containment failure. The 15 minutes is used as a threshold for indicating that operator actions have not been effective in restoring core cooling.

Barrier Analysis

Fuel Clad Barrier has been lost, RCS and the Containment Barriers have been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room.

Severe accident analysis has concluded that functional restoration procedures can arrest core degradation within the reactor vessel in a significant fraction of the scenarios, and that the likelihood

of containment failure in these scenarios is small. It is appropriate, therefore, to allow a reasonable period of time for the functional restoration procedures to arrest the core melt sequence. It should be apparent within 15 minutes if the procedures will be effective. The Emergency Coordinator should make the classification as soon as it is determined that the procedures have been, or will be, ineffective.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC6
EOP-CFST-1
EOP-TRIP-1

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.2.a

IC Potential Loss of Containment

EAL

Containment H_2 > **4 %**

MODE - 1, 2, 3, 4

BASIS

Hydrogen gas can be present in the Containment at the threshold levels only as a result of an inadequate core cooling accident, substantial zirc-water reaction, and a breach of the RCS. Containment H_2 levels above 4% signifies that an explosive mixture may exists.

Barrier Analysis

Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

A 4% mixture of H_2 with normal Containment atmosphere represents the deflagration lower limit. Any subsequent ignition and burn of this level mixture releases a substantial amount of energy that must be absorbed by the Containment structure, which is already under stress due to the Loss of the RCS Barrier.

DEVIATION

None

REFERENCES

NUMARC, NESP-007, PC2
EOP-TRIP-1
EOP-FRCE-1

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.2.b

IC Potential Loss of Containment

EAL

CNTMT Press. > **15 psig** with EITHER one of the following: • **No** CNTMT Spray **AND** < **5 CFCUs** Running in "Low Speed" • **One** CNTMT Spray Train I/S **AND** < 3 **CFCUs** Running in "Low Speed"

MODE - 1, 2, 3, 4

BASIS

Containment pressure increase to > 15 psig (the containment spray initiation setpoint) indicates a major release of energy to the containment. Failure of ALL Containment Spray with <5 Containment Fan Coil Units running in "low speed", or only one train of Containment Spray in service with <3 Containment Fan Coil Units running in "low speed", indicates a condition where systems designed for containment heat removal and depressurization do not have the capacity to maintain Containment pressure below the structural design limit. The threshold value for available Containment Depressurization and Cooling Systems is based upon system design basis for maintaining Containment integrity.

Barrier Analysis

Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

The Containment Cooling system and the Containment Spray system are redundant to each other in providing post accident cooling of the Containment atmosphere. With less than the minimum systems stated in the EAL threshold value, the ability to remove energy from the Containment atmosphere is severely impaired. Containment pressure >15 psig with a loss of Containment Cooling and Depressurization systems represents a potential loss of the Containment barrier.

DEVIATION

None

REFERENCES

NUMARC, NESP-007, PC2
EOP-TRIP-1
EOP-FRCE-1
Technical Specification Section 3.6.2

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.2.c

IC Loss of Containment

EAL

A **Rapid Unexplained** Containment Pressure **Decrease** following an initial **Increase** to **> 4 psig**

MODE - 1, 2, 3, 4

BASIS

Containment pressure increase to > 4 psig (the containment pressure safety injection initiation setpoint) indicates a major release of energy to the containment. These releases can only be provided by a large release of primary or secondary coolant to the Containment. For the cases that primary coolant provides the source of energy, a loss of the RCS has also occurred. A rapid unexplained loss of Containment pressure following an initial pressure increase indicates a loss of containment integrity. **Unexplained** means that the pressure decrease is not as a result of operator actions taken to reduce Containment pressure. The term **rapid** was added as an attempt to quantify the size of the Containment breech. Emergency Coordinator judgement should be used to determine if this EAL applies for rapid, unexplained Containment pressure decreases following initial increases to less than the 4 psig threshold.

Barrier Analysis

Containment Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

The threshold value of 4 psig was selected to be consistent with the Safety Injection and Adverse Containment criteria. For those cases where secondary coolant provides the source of energy, a faulted Steam Generator is possible. This requires actions in EOP-LOSC-1 to isolate the Main Steam lines to maintain intact Steam Generators for an RCS Heat Sink, minimize Containment Pressure, and to minimize RCS cooldown.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC2
EOP-TRIP-1
EOP-LOSC-1

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.3.a

IC Potential Loss of Containment

EAL

CNTMT Sump Level > **76%**

MODE - 1, 2, 3, 4

BASIS

The Containment Sump threshold of 76% is based upon containment flooding concerns, and is consistent with the CFST level requiring implementation of EOP-FRCE-2. An indicated level greater than this value indicates that water has been introduced into the Containment from other sources. Potential flooding of critical system components and instrumentation required for responding to an accident or performing an orderly shutdown may be affected. Thus the Containment and associated systems may not be capable of performing their function as a fission product barrier.

Barrier Analysis

Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. The intent of using CFST status in this EAL is to simplify the identification of the EAL threshold criteria monitored in the control room. The EAL threshold of >76% containment sump

level is consistent with the CFST criteria.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC7
EOP-TRIP-1
EOP-FRCE-1
EOP-FRCE-2

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.3.b

IC Loss of Containment

EAL

Valid CNTMT ϕ A, ϕ B or CNTMT Vent Isol Signal **AND** **Flow path** from CNTMT **to the environment**

MODE - 1, 2, 3, 4

BASIS

A **valid** Containment Isolation Signal represents a situation that requires closure of selected Containment Isolation valves to maintain containment integrity under abnormal conditions. The lines required to be isolated under these conditions connect potentially contaminated systems or Containment volume with systems outside the Containment. Classification under this EAL is not required if manual closure attempts **from control room** are successful in the event that the automatic isolation signal fails. The term "**valid**" is defined as an actual condition which requires a CNTMT isolation due to instrumentation setpoints being exceeded and was included to exclude those conditions where Containment Isolation is not required but has somehow resulted in a violation of CNTMT integrity. The term "**to the environment**" is intended to include all flowpaths to the environment either directly or via systems which exhaust to the Plant Vent (e.g.; leakage to the Auxiliary Building ventilation system).

Barrier Analysis

Containment Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

Technical Specification 3.6.3 "Containment Isolation Valves" was used to determine the signals required for Containment isolation. Any reference to Main Steam Isolation or Steam Generator Blowdown Isolation is covered under the Containment Bypass "potential loss" EAL.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC3
EOP-TRIP-1
OP-AR.ZZ-0003(Q)
SGS Technical Specifications

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.4.a

IC Potential Loss of Containment

EAL

Unisolable, Faulted Steam Generator OUTSIDE of Containment as indicated by S/G pressure **decreasing in an uncontrolled manner or completely depressurized**

MODE - 1, 2, 3, 4

BASIS

S/Gs which have unisolable faults outside of the Containment will require feed isolation and secondary side dryout in order to stop the resultant cooldown. This subsequent dryout will result in significant thermal and differential pressures across the tube sheet and greater risk of a SGTR on an already faulted S/G. As such, this event is considered to be a precursor to a more serious event and will lead to at least an Unusual Event classification. This EAL excludes SG depressurization events that are a direct result of EOP directed operator action. The term "**decreasing in an uncontrolled manner**" is defined consistent with the EOP definition of a faulted S/G. "**Unisolable**"is defined as a condition where manual isolation is not possible such as a pipe rupture with no accessible isolation valves, a stuck open relief valve, etc. (excluding minor valve leakage).

Barrier Analysis

Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

This EAL was added to the Barrier Table as a Containment Bypass "potential loss" to ensure that all unisolable steam or feedwater break events, where the fault is outside of the Containment, are at least classified as an Unusual Event. The "potential loss" category (1 point) was selected to ensure that further challenges to other Fission Product Barriers result in Emergency Classifications consistent with current philosophy. The Containment Barrier section was selected since Technical Specifications section 3.6.3 "Containment Isolation Valves" require both Main Steam Isolation and Steam Generator Blowdown Isolation. The Containment Bypass section was selected based upon the leakage being non-radioactive steam or feedwater with concerns for RCS integrity appropriately classified under the RCS Barrier section. An NRC inspection at Calvert Cliffs Nuclear Plant resulted in the addition of this EAL.

DEVIATION

This EAL was added as a Potential Loss of Containment due to the Containment Bypass concern discussed in HU5 "Uncontrolled RCS cooldown due to Secondary Depressurization". A review of NRC Inspection Report Nos. 50-317/94-27; 50-318/94-27 for the Calvert Cliffs Nuclear Power Plant indicated that an unisolable, faulted S/G outside of containment represents at least a UE Classification. Technical Specification 3.6.3 for Containment Isolation Valves require OPERABLE Main Steam Isolation valves MS7s and MS18s. The Main Steam Isolation Valves (MS167s) also receive a MSL Isolation Signal but are covered under their own Tech. Spec 3.7.1.5. Therefore, failure of any Main Steam Isolation valve to close upon demand represents a potential loss of Containment integrity and was included in the Fission Product Barrier Table in order to properly classify events in conjunction with the RCS and Fuel Clad Barriers.

REFERENCES

NUMARC NESP-007, PC7
NRC Inspection Report 50-317/94-27
EOP-TRIP-1
EOP-LOSC-1
OP-AB.STM-0001(Q)

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.4.b

IC Loss of Containment

EAL

Primary to Secondary Leakage > **Tech Spec Limits** **AND** **Prolonged, Direct** Secondary leakage **to the environment** exists

MODE - 1, 2, 3, 4

BASIS

Primary to Secondary leakage greater than Technical Specifications along with indication of prolonged secondary side leakage outside the containment indicates a Steam Generator Tube leak that is discharging directly to the environment. A "**prolonged**" release is defined as an unisolable rupture (excluding minor valve leakage) of a steam or feed line outside of containment, or a stuck open relief valve on a secondary system connected to the steam side of the leaking S/G. The term "**direct secondary leakage to the environment**" is intended to include all flowpaths of contaminated secondary coolant to the environment either directly or via systems which exhaust to the Plant Vent (e.g.; leakage to the Auxiliary Building ventilation system) with the following exception: If the procedure in effect requires steaming the leaking SG to the main condenser, the condenser off-gas (R15) pathway is excluded from this EAL provided the release is both controlled and monitored. For Steam Generator Tube Ruptures, this EAL is used in conjunction with the RCS Barrier SGTR EALs to ensure proper classification if the ruptured SG is also faulted outside of containment.

Barrier Analysis

Containment Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

The primary intent of this EAL is to ensure, in conjunction with the RCS Barrier "Loss" SGTR EAL, that Ruptured SGs that are also faulted outside of containment, are classified as at least a Site Area Emergency. The threshold for establishing the bypass of containment was intended to be a prolonged release of radioactivity from the ruptured SG directly to the environment.

The secondary purpose of this EAL is to classify SG tube leak events which exceed Technical Specification limits, but do not exceed the RCS Barrier SGTR thresholds. If a prolonged release occurs from a SG during a leak, only an Unusual Event would be declared based on the "Loss" of the containment barrier.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC4

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.4.c

IC Loss of Containment

EAL

LOCA conditions **AND** CNTMT Press. OR Sump Level NOT increasing as expected

MODE - 1, 2, 3, 4

BASIS

The threshold conditions require that a LOCA is occurring. Such events are accompanied by release of energy and inventory from the RCS to the Containment, and should result in pressure and sump level increase in the Containment. Failure of containment pressure or sump level to increase following a known LOCA is an indication of a containment bypass situation.

Barrier Analysis

Containment Barrier has been lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

A LOCA is expected to result in Containment pressure increase to > 4 psig. This leak rate should result in the accumulation of inventory in the Containment Sump as well as a CNTMT SUMP PMP START OHA as the level increases. A lack of Containment and Sump level response or containment pressure not increasing indicate that the Containment barrier has been bypassed.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC2
EOP-TRIP-1
EOP-LOSC-1
OP-AR.ZZ-0003(Q)

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.5

IC Potential Loss of Containment

EAL

R44A or R44B > **2000 R/hr**

MODE - 1, 2, 3, 4

BASIS

A containment high range monitor reading in excess of 2000 R/hr indicates significant Fuel Clad damage, well in excess of that corresponding to a loss of the RCS and Fuel Clad barriers. The value corresponds to a release of approximately 20% of the gap region. Regardless of whether containment is challenged, this amount of activity in containment, if released, could have severe consequences and it is prudent to treat this as a potential loss of containment.

Barrier Analysis

Containment Barrier has been potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the potential loss or loss of additional barriers per EAL section 3.0.

DISCUSSION

This calculation is based upon a calculation of 20% Clad Damage as it relates to R44 measured Dose Rate values. This calculation was prepared by the Nuclear Fuels Group and is on file with Emergency Preparedness under file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification" date 1/26/95.

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC5
NUREG-1228 - Source Term Estimation During Incident Response to Severe Nuclear Power Plant Accidents
Calculation by Nuclear Fuels file title DS1.6-00XX "Verification of Emergency Action Levels for Event Classification

3.0 Fission Product Barriers

3.3 Containment Barrier

3.3.6

IC Potential Loss or Loss of Containment Barrier

EAL

Any condition, in the opinion of the EC, that indicates a potential loss (1 pt) or loss (2 pts) of the Containment Barrier

MODE - 1, 2, 3, 4

BASIS

This EAL allows the Emergency Coordinator to address any factor not otherwise covered in the Fission Product Barrier Table to determine that the Containment barrier has been lost or potentially lost. A complete loss in the ability to monitor the Containment barrier should be considered a "Potential Loss" of that barrier. Classification under this "EC Judgement" EAL should not be used if specific threshold values are given for the plant conditions being considered for Emergency Classification.

Barrier Analysis

The Containment Barrier has been lost or potentially lost.

ESCALATION CRITERIA

This event will be classified and/or escalated based on the loss or potential loss of additional barriers per EAL section 3.0.

DISCUSSION

None

DEVIATION

None

REFERENCES

NUMARC NESP-007, PC8

4.0 Miscellaneous

4.1 Emergency Coordinator Discretion

UNUSUAL EVENT - 4.1.1

IC Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of an Unusual Event

EAL

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate a **Potential Degradation of Plant Safety**

MODE - All

BASIS

Emergency Coodrdinator judgement to declare an Unusual Event , based on the determination that the **Potential Degradation of Plant Safety** exists, should be implemented ONLY when conditions are not explicitly addressed elsewhere in the ECG. The phrase **Potential Degradation of Plant Safety** is intended to apply to those conditions that include a likely or actual breakdown of event mitigating actions or that hinder plant personnel from safely operating the plant. The following examples are by no means all inclusive and are not intended to limit the discretion of the SNSS. Examples for consideration include the following:

- inadequate emergency response procedures
- failure or unavailability of emergency systems during an accident/transient condition
- insufficient availability of equipment or support personnel to deal with the ongoing or anticipated events
- aircraft crash on or near site
- explosions near site (within owner controlled area)

Barrier Analysis

Additional guidance on EC judgement for Fission Product Barriers is found on the Fission Product Barrier Table, Section 3.0.

ESCALATION CRITERIA

Emergency Coordinator Judgement

DISCUSSION

Dose consequences from an Unusual Event, if a radiological release is involved, would not require offsite response or field monitoring since any release at this level would be < 10 mRem TEDE. Refer to Section 6 of the ECG if a Radiological release is ongoing.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU5, HU1.3, HU1.5, Section 3.7.

4.0 Miscellaneous

4.1 Emergency Coordinator Discretion

ALERT - 4.1.2

IC Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of an Alert

EAL

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate plant safety systems **(more than one)** are, or may be degraded **AND** Increased monitoring of plant functions is warranted

MODE - All

BASIS

Emergency Coordinator judgement to declare an Alert, based on the determination that Plant Systems are, or may be degraded, should be implemented ONLY when conditions are not explicitly addressed elsewhere in the ECG. This includes a determination by the SNSS that hazards exist that have, or may have caused damage to more than one safety system or to a plant vital structure. In addition, if plant conditions degrade to the point where increased monitoring of plant functions is warranted to better determine the plants actual safety status than an Alert classification may be appropriate.

Barrier Analysis

Additional guidance on EC judgement for Fission Product Barriers is found on the Fission Product Barrier Table, Section 3.0.

ESCALATION CRITERIA

Emergency Coordinator Judgement

DISCUSSION

Dose consequences for an Alert, if a radiological release was ongoing, would only be a small fraction of the EPA Protective action Guideline (PAG) plume exposure level, i.e., 10 to 100 mRem TEDE. Refer to ECG Section 6 if a radiological release is ongoing.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA6, HA1.4, Section 3.7.
EPA-400

4.0 Miscellaneous

4.1 Emergency Coordinator Discretion

SITE AREA EMERGENCY - 4.1.3

IC Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of a Site Area Emergency

EAL

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate EITHER one of the following:

- The Potential for an uncontrolled radiological release or the source term available in the Containment atmosphere could result in Site Boundary Dose rates in **excess of 100 mRem/hr**
- Criteria for declaration of a Site Area Emergency per the ECG Introduction Section exists

MODE - All

BASIS

Emergency Coordinator judgement to declare a Site Area Emergency, based on the determination that the potential exists for an uncontrolled radiological release or the source term available in the Containment atmosphere could result in Site Boundary dose rates in excess of 100 mRem/hr, should be implemented ONLY when conditions are not explicitly addressed elsewhere in the ECG. In addition, any criteria that satisifies the definition of a Site Area Emergency in the ECG Introduction Section, also warrants declaration under this EAL. A Site Area Emergency is intended to be anticipatory of potential fission product barrier failure, and allows offsite agencies to commence preparation for emergency response.

Barrier Analysis

Additional guidance on EC judgement for Fission Product Barriers is found on the Fission Product Barrier Table, Section 3.

ESCALATION CRITERIA

Emergency Coordinator Judgement

DISCUSSION

Radiological release rates during a Site Area Emergency declaration are not expected to result in exposure levels which exceed the EPA Protective Action Guideline threshold values except within the Site Boundary. However, plume exposure levels of 100 to < 1000 mRem TEDE may be possible offsite and levels >1000 mRem TEDE could be experienced onsite. Refer to ECG Section 6 if a radiological release is ongoing.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HS3, Section 3.7.
EPA-400

4.0 Miscellaneous

4.1 Emergency Coordinator Discretion

GENERAL EMERGENCY - 4.1.4

IC Other Conditions Exist Which In the Judgement of the Emergency Coordinator Warrant Declaration of a General Emergency

EAL

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicateEither one of the following:

- The Potential for an uncontrolled radiological release is expected to **exceed** Protective Action Guideline levels per EAL 6.1.4.a
- Criteria for declaration of a General Emergency per the ECG Introduction Section exists

MODE - All

BASIS

Emergency Coordinator judgement to declare a General Emergency , based on the determination that the potential for an uncontrolled radionuclide release exists, should be implemented ONLY when conditions are not explicitly addressed elsewhere in the ECG. In addition, any criteria that satisifies the definition of a General Emergency in the ECG Introduction Section, also warrants declaration under this EAL. A General Emergency is intended to be anticipatory of fission product barrier failure, and permits maximum offsite intervention time.

Barrier Analysis

This EAL is intended for EC judgement for declaration at the General Emergency level. Additional guidance on EC judgement for Fission Product Barriers is found on the Fission Product Barrier Table, Section 3.0.

ESCALATION CRITERIA

N/A

DISCUSSION

Radiological release rates during a General Emergency may exceed the EPA Protective Action Guidelines, i.e., >1000mRem TEDE, for more than the immediate site area. ECG Section 6, Radiological Releases/Occurrences should be consulted for releases of this magnitude.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HG2, Section 3.7.
EPA-400

5.0 Failure to Trip

5.1 ATWT

ALERT - 5.1.2.a/5.1.2.b

IC Failure of the RPS to Successfully Complete a Reactor Trip (Automatic or Manual)

EAL

EITHER one of the following conditions are met:

- Reactor Protection System Trip Setpoint Exceeded AND an Automatic Reactor Trip is NOT **Confirmed**
- ANY Manually Initiated Reactor Trip **from the Control Room** is NOT **Confirmed**

MODE - 1, 2, 3

BASIS

This condition indicates failure of the reactor protection system to trip the reactor, either automatically or on manual demand. This condition is more than a potential degradation of a safety system in that a front line protection system did not function in response to a plant transient and thus the plant safety has been compromised, and design limits of the fuel may have been exceeded. An Alert is indicated because conditions exist that could lead to a potential loss of the fuel clad or RCS barriers. The term "**from the Control Room**" is defined as any action taken by the NCOs in the Control Room Area which results in a rapid insertion of Control Rods into the core. The term for expressing an unsuccessful trip as "NOT **confirmed**" is defined as listed in the EOP network. Confirmed Manual reactor trip is not considered successful if actions away from the Control Room Area (e.g. dispatch of an NEO to locally open the Reactor Trip Breakers) were required to trip the reactor. ANY unsuccessful Manual attempt to trip the reactor will still be classified under this EAL regardless of the success of additional manual attempts. Any single manual attempt failure will constitute a major breakdown of a system designed to directly protect the health and safety of the General Public.

Barrier Analysis

This event does not reach the threshold for the loss of Fuel Clad or RCS Barriers, but conditions exist that could lead to a potential loss of those barriers.

ESCALATION CRITERIA

For the case in which the manual trip from the control room is not successful with Reactor Power ≥ 5%, this event would be escalated to a Site Area Emergency.

DISCUSSION

Entry into EOP-FRSM-1 may be required if the manual Reactor Trip from the console "Trip Handle" or P-9 is not successful. Additional control console actions taken in EOP-FRSM-1, such as opening the Reactor Trip or Rod Drive MG Sets, would constitute a successful manual reactor trip from the Control Room. Manual trip is any action by the reactor operator at the controls which causes the control rods to be rapidly inserted into the core and bring the reactor subcritical.

The threshold value of 5% reactor power for escalation criteria was selected to be consistent with EOP-FRSM-1 entry criteria. Under these low power conditions, the reactor is providing less heat than the maximum decay heat load for which the safety systems are designed.

DEVIATION

NUMARC EAL SA2 suggests that an Alert classification be based on an automatic RPS trip failure followed by a successful manual trip from the control room, with EAL SS2 escalating to a Site Area Emergency if the manual trip fails. In addition, EAL SS2 basis indicates that the SAE threshold should be such that following the automatic and manual trip failure, the reactor is producing more heat than the maximum for which the safety systems were designed. The EOPs indicate that this heat load is ≥ 5%.

The Salem Alert threshold was chosen so that unsuccessful manually initiated RPS trips from the control room, as well as unsuccessful automatically initiated trips via RPS would be classified at the Alert level. This will cover those situations which require a manual reactor trip under conditions where an automatic trip signal may not have been generated. In either case, failure of RPS to perform its intended function when demanded is indicated.

The Salem SAE threshold was chosen to include either automatic or manual failure (for the reasons stated above), with resulting power ≥ 5% as suggested in NUMARC EAL SS2 bases.

By defining an unsuccessful trip as Reactor Trip NOT **confirmed** (as defined in the EOP network), partial trips that result in power levels < 5% would be classified as an Alert, whether automatically or manually initiated.

REFERENCES

NUMARC NESP-007, SA2
EOP-TRIP-1, Reactor Trip or Safety Injection
EOP-CFST-1, Critical Safety Function Safety Trees

5.0 Failure to Trip

5.1 ATWT

SITE AREA EMERGENCY - 5.1.3

IC Failure of the RPS to Successfully Complete a Reactor Trip (Automatic or Manual) and Reactor Power is Above 5%

EAL

EITHER one of the following conditions are met:

- Reactor Protection System Trip Setpoint Exceeded AND an Automatic Reactor Trip is NOT **Confirmed**
- ANY Manually Initiated Reactor Trip **from the Control Room** is NOT **Confirmed**

AND
ALL Reactor Trip attempts **from the Control Room** DID NOT **reduce (and maintain)** Reactor Power to **< 5%**

MODE - 1, 2

BASIS

Failure to trip events should not be classified under this EAL before manual trips have been attempted. Automatic and manual trips are not considered successful if action away from the reactor control console were required to trip the reactor. Under these conditions, the reactor is producing more heat than the maximum decay heat load for which the safety systems are designed. A Site Area Emergency is indicated because conditions exist that could lead to imminent loss or potential loss of both the fuel clad and RCS barriers. The term "**from the Control Room**" is defined as any action taken by the NCOs in the Control Room Area which result a rapid insertion of Control Rods into the core. The term "**bring (and maintain)**" was included to ensure that return to power events are still classified under this EAL. Although this EAL may be viewed as redundant to the Fission Product Barrier Table EALs, its inclusion is necessary to better assure timely recognition and emergency response.

Barrier Analysis

This event does not reach the threshold for the loss of Fuel Clad or RCS Barriers, but conditions exist that could lead to a potential (perhaps imminent) loss of those barriers.

ESCALATION CRITERIA

For the case in which an adequate heat sink is not available, this event would be escalated to a General Emergency per EAL Section 5.1.4.

DISCUSSION

Entry into EOP-FRSM-1 will be required if the manual trip from the console "trip handle" or P-9 is not successful. EOP-FRSM-1 requires an Equipment Operator to locally open the Reactor Trip Breakers and trip the Rod Drive MG Sets. Since this action is outside the control room, a successful remote Reactor Trip will require classification under this EAL. The threshold value of 5% reactor power was selected to be consistent with CFST EOP-FRSM-1 entry criteria. For events which result in a return to > 5% reactor power from some lower value, classification under this EAL would be required.

DEVIATION

NUMARC EAL SA2 suggests that an Alert classification be based on an automatic RPS trip failure followed by a successful manual trip from the control room, with EAL SS2 escalating to a Site Area Emergency if the manual trip fails. In addition, EAL SS2 basis indicates that the SAE threshold should be such that following the automatic and manual trip failure, the reactor is producing more heat than the maximum for which the safety systems were designed. The EOPs indicate that this heat load is ≥ 5%.

The Salem Alert threshold was chosen so that unsuccessful manually initiated RPS trips from the control room, as well as unsuccessful automatically initiated trips via RPS would be classified at the Alert level. This will cover those situations which require a manual reactor trip under conditions where an automatic trip signal may not have been generated. In either case, failure of RPS to perform its intended function when demanded is indicated.

The Salem SAE threshold was chosen to include either automatic or manual failure (for the reasons stated above), with resulting power ≥ 5% as suggested in NUMARC EAL SS2 bases.

By defining an unsuccessful trip as Reactor Trip NOT **confirmed** (as defined in the EOP network), partial trips that result in power levels < 5% would be classified as an Alert, whether automatically or manually initiated.

REFERENCES

NUMARC NESP-007, SS2
EOP-TRIP-1, Reactor Trip or Safety Injection
EOP-CFST-1, Critical Safety Function Safety Trees

5.0 Failure to Trip

5.1 ATWT

GENERAL EMERGENCY - 5.1.4

IC Failure of the RPS to Complete an Automatic Trip and Manual Trip was Not successful and There is Indication of an Extreme Challenge to the Ability to Cool the Core

EAL

EITHER one of the following conditions are met:

- Reactor Protection System Trip Setpoint Exceeded AND an Automatic Reactor Trip is NOT **Confirmed**
- ANY Manually Initiated Reactor Trip **from the Control Room** is NOT **Confirmed**

AND
ALL Reactor Trip attempts **from the Control Room** DID NOT **reduce (and maintain)** Reactor Power to **< 5%**

AND
EITHER one of the following conditions exist:
- **Core Cooling RED PATH**
- **Heat Sink RED PATH**

MODE - 1, 2

BASIS

Automatic or manual trips are not considered successful if actions away from the reactor control console were required to trip the reactor. These conditions indicate a fundamental failure of the automatic and manual trip protection of the Reactor Protection System, and are indicative of heat generation significantly greater than the Heat Removal capabilities. The potential for rapid core degradation exists. The General Emergency declaration is intended to be anticipatory of fission product barrier failure and permits maximum offsite intervention time.

Barrier Analysis

If threshold for this EAL is met, Table 3.0 Fission Product Barriers for Loss of the Fuel Clad (Core Cooling RED) and/or Potential Loss of the RCS (Heat Sink RED) Barriers may have been exceeded.

ESCALATION CRITERIA

None

DISCUSSION

Entry into EOP-FRSM-1 will be required if the manual trip from the console "trip handle" or P-9 is not successful. EOP-FRSM-1 requires an Equipment Operator to locally open the Reactor Trip Breakers and trip the Rod Drive MG Sets. Since this action is outside the control room, a successful remote Reactor Trip will require classification under this EAL. The threshold value of 5% reactor power was selected to be consistent with CFST EOP-FRSM-1 entry criteria. For events which result in a return to > 5% reactor power from some lower value, classification under this EAL would be required.

If actions taken in EOP-FRSM-1 are ineffective, further CFST monitoring is utilized to determine when the additional thresholds are exceeded. Further degradation is indicated by the occurrence of valid CFST Core Cooling RED, or Heat Sink RED. These conditions are indicative of a loss or potential loss of the heat sink for core cooling.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SG2
EOP-TRIP-1, Reactor Trip or Safety Injection
EOP-CFST-1, Critical Safety Function Safety Trees
EOP-FRSM-1, Response to Nuclear Power Generation
EOP-FRHS-1, Loss of Secondary Heat Sink

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

UNUSUAL EVENT - 6.1.1.a

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that Exceeds Two Times the Radiological Technical Specifications for 60 minutes or longer

EAL

Dose Assessment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL:

- TEDE 4-Day Dose
  > 2.0E-01 mRem
- Thyroid-CDE Dose
  > 6.8E-01 mRem

AND

Release is ongoing for **≥ 15 minutes**

MODE- All

BASIS

Releases in excess of 2 times Technical Specifications that continue for ≥ 60 minutes represent an uncontrolled situation and hence a potential degradation in the level of safety.

Prorating the 500 mRem/yr criterion for the TEDE 4-day dose: time (8766 hr/yr); the 2 x Tech. Spec. multiplier; and, Artificial Island's Allocation Factor of 0.5 (50% per site), the associated site boundary dose rate would be 0.057 mRem/hr.

$$\textit{TEDE 4-Day MEA Dose Rate} = \left(\frac{500 mRem/yr}{8766 hr/yr}\right)(2)(.5) - 0.057 mRem/hr$$

This is rounded to .05 mRem/hr.

The TEDE 4-day Dose is based on a 4 hour release duration. Therefore .05 mRem/hr x 4 hours = 0.2 mRem.

Prorating the 1500 mRem/yr criterion for the Thyroid-CDE Dose: time (8766 hr/yr); the 2 x Tech. Spec. multiplier; and, Artificial Island's Allocation Factor of 0.5 (50% per site), the associated site boundary dose rate would be 0.17 mRem/hr.

$$\textit{Thyroid-CDE MEA Dose Rate} = \left(\frac{1500\ mRem\ /yr}{8766\ hr/yr}\right)(2)(.5)\text{-}0.17\ mRem\ /hr$$

The Thyroid-CDE Dose is based on a 4 hour release duration. Therefore 0.17 mRem/hr x 4 hours = 0.68 mRem.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert when effluents increase to 200 times Technical Specification limits.

DISCUSSION

The final integrated dose is very low and is not the primary concern; rather it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes.

An indication or report is considered to be valid when it is verified by:

1. An instrument channel check.
2. Indications on related or redundant instruments.
3. By direct observation by plant personnel.

Verification efforts should be completed within 15 minutes.

It is not intended that the release be averaged over 60 minutes, but exceed 2 times Tech. Spec. limits for 60 minutes or longer. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 2 times the limit for 60 minutes or longer.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AU1.4
Off-Site Dose Calculation Manual, Section 2.0 - Gaseous Effluents

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

UNUSUAL EVENT - 6.1.1.b

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that Exceeds Two Times the Radiological Technical Specifications for 60 minutes or longer

EAL

Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **.05 mRem/hr** above normal background **AND** Release is ongoing for ≥ **60 minutes**

MODE - All

BASIS

Releases in excess of 2 times Technical Specifications that continue for ≥ 60 minutes represent an uncontrolled situation and hence a potential degradation in the level of safety. Prorating the 500 mRem/yr criterion for: time (8766 hr/yr); the 2 x Tech. Spec. multiplier; and, Artificial Island's Allocation Factor of 0.5 (50% per site), the associated site boundary (MEA) dose rate would be 0.057 mRem/hr.

Protected Area Boundary Dose Rate = $\left(\frac{500\ mRem\ /yr}{8766\ hr/yr}\right)(2)(.5) = 0.057\ mRem\ /hr$

This is rounded to .05 mRem/hr

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert when effluents increase to 200 times Technical Specification limits.

DISCUSSION

The final integrated dose is very low and is not the primary concern; rather it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes.

An indication or report is considered to be valid when it is verified by:

1. An instrument channel check.
2. Indications on related or redundant instruments.
3. By direct observation by plant personnel.

Verification efforts should be completed within 15 minutes.

It is not intended that the release be averaged over 60 minutes, but exceed 2 times Tech. Spec. limits for 60 minutes or longer. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 2 times the limit for 60 minutes or longer.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AU1.3
Off-Site Dose Calculation Manual, Section 2.0 - Gaseous Effluents

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

UNUSUAL EVENT - 6.1.1.c

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that Exceeds Two Times the Radiological Technical Specifications for 60 minutes or longer

EAL

Gaseous effluent release sample analysis on EITHER one of the following indicates a concentration of:

- **≥ 1.28E-02 µCi/cc Total Noble Gas**
- **≥ 1.11E-06 µCi/cc I-131**

AND

Release is ongoing for ≥ **60 minutes**

MODE - All

BASIS

A sample analysis of the release from all vent paths in excess of 2 times Technical Specifications that continues for 60 minutes or longer represent an uncontrolled situation and hence a potential degradation in the level of safety. The EAL thresholds are based on 2 times Technical Specification Noble Gas and Iodine release rates limits.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert when effluents increase to 200 times Technical Specification limits.

DISCUSSION

The final integrated dose is very low and is not the primary concern; rather it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes. It is not intended that the release be averaged over 1 hour, but exceed 2 times Technical Specifications limit for 1 hour. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 2 times the limit for greater than 1 hour.

Calculation of the threshold sample concentrations are as follows:

Noble Gas Sample Concentration = $\frac{4.84E+05\ \mu Ci/sec}{472\ x 80000\ cfm} = 1.28E-02\ \mu Ci/cc$

I-131 Sample Concentration = $\frac{4.2E+01\ \mu Ci/sec}{472 x 80000 cfm} = 1.11E-06\ \mu Ci/cc$

Where: 472 = conversion factor (28,317 cc/ft^3 x 1 min./60 sec.)
80000 cfm = Plant Vent Flow (normal)
The noble gas release rate of 4.84E+05 µCi/sec is obtained by multiplying the Technical Specification release rate of 2.42E+05 µCi/sec times 2.
The iodine release rate of 4.2E+01 µCi/sec is obtained by multiplying the Technical Specification release rate of 2.1E+01µCi/sec times 2.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AU1.2
Off-Site Dose Calculation Manual, Section 2.0

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

UNUSUAL EVENT - 6.1.1.d

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that Exceeds Two Times the Radiological Technical Specifications for 60 minutes or longer

EAL

Valid Plant Vent Effluent Alarm **AND** Release rate EXCEEDS **4.84E+05 µCi/sec Total Noble Gas** **AND** Dose Assessment is NOT available **AND** The Release is ongoing for ≥ **60 minutes**

MODE - All

BASIS

Releases in excess of 2 times Technical Specifications that continue for ≥ 60 minutes represent an uncontrolled situation and hence a potential degradation in the level of safety. The release rate of 4.84E+05 µCi/sec is obtained by multiplying the Technical Specification release rate of 2.42E+05 µCi/sec times 2. Total Noble Gas release rate is the summation of Unit One and Unit Two noble gas release rates.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert when effluents increase to 200 times Technical Specification limits.

DISCUSSION

The final integrated dose is very low and is not the primary concern; rather it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes.

The event should be classified based on the dose assessment EAL (6.1.1.a) using real time meteorological conditions, if available within 60 minutes. The total noble gas release rate (4.84E+05µci/sec) is calculated using the ODCM yearly average X/Q, not real time Met conditions, and should only be used to classify if dose assessment is not available within 60 minutes.

An indication or report is considered to be valid when it is verified by:

1. An instrument channel check.
2. Indications on related or redundant instruments.
3. By direct observation by plant personnel.

Verification efforts should be completed within 15 minutes.

It is not intended that the release be averaged over 60 minutes, but exceed 2 times Tech. Spec. limits for 60 minutes or longer. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 2 times the limit for 60 minutes or longer.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AU1.1
Off-Site Dose Calculation Manual, Section 2.0 - Gaseous Effluents
OP-AB.RAD-0001
NUMARC Draft white paper, 7/25/94;9/10/94

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

ALERT - 6.1.2.a

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that exceeds 200 times Radiological Technical Specifications for 15 minutes or longer

EAL

Dose Assesment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL:

- TEDE 4-Day Dose ≥ **2.0E+01 mRem**
- Thyroid-CDE Dose ≥ **6.8E+01 mRem**

AND

Release is ongoing for ≥ **15 minutes**

MODE - All

BASIS

Dose Assessment at or beyond the MEA exceeding the EAL threshold , can result from a Gaseous Radiological Release in excess of 200 times Technical Specifications.This condition results from an uncontrolled release of radioactivity to the environment, resulting in significantly elevated offsite dose rates. The threshold for this EAL is NOT based on a specific offsite dose rate, but rather on the loss of plant control implied by a radiological release of this magnitude that was not isolated within 15 minutes.. Classification is based on an ongoing release that does not comply with a license condition. **Unplanned** is defined as any release for which a radioactive discharge permit was not prepared, or a release that exceeds the conditions on the applicable permit.

Dose Assessment using actual meteorological data provides an accurate indication of release magnitude. The use of dose assessment based EALs is therefore preferred over the use of Release Rate based EALs which utilize calculations which have built-in inaccuracies because ODCM default Meteorological data is used. As long as dose assessment is available, this EAL should be used in place of EAL 6.1.2.d.

It is not intended that the release be averaged over 15 minutes, but exceed 200 times the Technical Specification limit for 15 minutes or longer. In addition, it is intended that the event be declared as soon as it is determined that the release will exceed 200 times the limit for 15 minutes or longer.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when effluent releases increase to a level that would cause a 100 mrem dose at the MEA boundary.

DISCUSSION

Prorating the 500 mRem/yr criterion for the TEDE 4-day dose: time (8766 hr/yr); the 200 x Tech. Spec. multiplier; and, Artificial Island's Allocation Factor of 0.5 (50% per site), the associated site boundary dose rate would be 5.7 mRem/hr.

TEDE 4-Day MEA Dose Rate = $\left(\frac{500\ mRem/yr}{8766\ hr/yr}\right)(200)(.5) = 5.7 mRem/hr$

This is rounded to 5.0 mRem/hr.

The TEDE 4-day Dose is based on a default (assumed) 4 hour release duration. Therefore 5.0 mRem/hr x 4 hours = 20 mRem.

Prorating the 1500 mRem/yr criterion for the Thyroid-CDE Dose: time (8766 hr/yr); the 200 x Tech. Spec. multiplier; and, Artificial Island's Allocation Factor of 0.5 (50% per site), the associated site boundary dose rate would be 17 mRem/hr.

Thyroid-CDE MEA Dose Rate = $\left(\frac{1500 mRem/yr}{8766 hr/yr}\right)(200)(.5) = 17 mRem/hr$

The Thyroid-CDE Dose is based on a
4 hour release duration. Therefore 17.0 mRem/hr x 4 hours = 68 mRem.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AA1.4
Off-Site Dose Calculation Manual, Section 2.0 - Gaseous Effluents
NUMARC Draft White Paper, 7/25/94; 9/10/94

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

ALERT - 6.1.2.b

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that exceeds 200 times Radiological Technical Specifications for 15 minutes or longer

EAL

Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **5 mRem/hr** **AND** Release is ongoing for ≥ **15 minutes**

MODE - All

BASIS

Releases in excess of 200 times Technical Specifications that continue for ≥ 15 minutes represent an uncontrolled situation and hence a degradation in the level of safety. Prorating the 500 mRem/yr criterion for: time (8766 hr/yr); the 200 x Tech. Spec. multiplier; and, Artificial Island's Allocation Factor of 0.5 (50% per site), the associated site boundary dose rate would be 5.7 mRem/hr.

Protected Area Boundary Dose Rate = $\left(\frac{500\ mRem\ /yr}{8766\ hr/yr}\right)(200)(.5)\text{-}5.7 mRem\ /hr$

This is rounded to 5 mRem/hr

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when effluents increase to a level that would cause a 100 mRem dose at the protected area boundary in 60 minutes or less.

DISCUSSION

An indication or report is considered to be valid when it is verified by:

1. An instrument channel check.
2. Indications on related or redundant instruments.
3. By direct observation by plant personnel.

Verification efforts should be completed within 15 minutes.

It is not intended that the release be averaged over 15 minutes, but exceed 200 times Tech. Spec. limits for 15 minutes or longer. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 200 times the limit for 15 minutes or longer.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AA1.3
Off-Site Dose Calculation Manual, Section 2.0 - Gaseous Effluents

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

ALERT - 6.1.2.c

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that exceeds 200 times Radiological Technical Specifications for 15 minutes or longer

EAL

Gaseous effluent release sample analysis on EITHER one of the following indicates a concentration of:

- **≥ 1.28E+00 µCi/cc Total Noble Gas**
- **≥ 1.11E-04 µCi/cc I-131**

AND

Release is ongoing for ≥ **15 minutes**

MODE - All

BASIS

Releases in excess of 200 times Technical Specifications that continue for 15 minutes or longer represent an uncontrolled situation and hence a potential degradation in the level of safety. The noble gas release rate of 4.84E+07 µCi/sec is obtained by multiplying the Technical Specification release rate of 2.42E+05 µCi/sec times 200. The iodine release rate of 4.2E+03 µCi/sec is obtained by multiplying the Technical Specification release rate of 2.1E+01µCi/sec times 200.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when effluents increase to a level that would cause a 100 mrem dose at the protected area boundary.

DISCUSSION

It is not intended that the release be averaged over 15 minutes, but exceed 200 times Technical Specifications limit for 15 minutes or longer. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 200 times the T/S limit for 15 minutes or longer.

Calculation of the threshold sample concentrations are as follows:

Noble Gas Sample Concentration = $\frac{4.84E{+}07\ \mu Ci/\text{sec}}{472\ x 80000\ cfm} = 1.28E{+}00\ \mu Ci/cc$

I-131 Sample Concentration = $\frac{4.2E{+}03\ \mu Ci/\text{sec}}{472\ x 80000\ cfm} = 1.11E{-}04\ \mu Ci/cc$

Where: 472 = conversion factor (28,317 cc/ft^3 x 1 min./60 sec.)
80000 cfm = Plant Vent Flow (normal)

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA1.2
Off-Site Dose Calculation Manual, Section 2.0

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

ALERT - 6.1.2.d

IC Any Unplanned Release of Gaseous Radioactivity to the Environment that exceeds 200 times Radiological Technical Specifications for 15 minutes or longer

EAL

Valid Plant Vent Effluent Alarm
AND
Release rate EXCEEDS **4.84E+07 µCi/sec Total Noble Gas**
AND
Dose Assessment is NOT available
AND
Release is ongoing for ≥ **15 minutes**

MODE - All

BASIS

Releases in excess of 200 times Technical Specifications that continue for ≥ 15 minutes represent an uncontrolled situation and hence a degradation in the level of safety. The release rate of 4.84E+07 µCi/sec is obtained by multiplying the Technical Specification release rate of 2.42E+05 µCi/sec times 200. Total Noble Gas release rate is the summation of Unit One and Unit Two noble gas release rates.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when effluents increase to a level that would cause a 100 mrem dose at the protected area boundary.

DISCUSSION

The final integrated dose is very low and is not the primary concern; rather it is the degradation in plant control implied by the fact that the release was not isolated within 15 minutes.

The event should be classified based on the dose assessment EAL (6.1.2.a) using real time meteorological conditions, if available within 15 minutes. The total noble gas release rate (4.84E+07µci/sec) is calculated using the ODCM yearly average X/Q, not real time Met conditions, and should only be used to classify if dose assessment is not available within 15 minutes.

An indication or report is considered to be valid when it is verified by:

1. An instrument channel check.
2. Indications on related or redundant instruments.
3. By direct observation by plant personnel.

Verification efforts should be completed within 15 minutes.

It is not intended that the release be averaged over 15 minutes, but exceed 200 times Tech. Spec. limits for greater than 15 minutes. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 200 times the limit for greater than 15 minutes.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AA1.1
Off-Site Dose Calculation Manual, Section 2.0 - Gaseous Effluents
OP-AB.RAD-0001
NUMARC Draft white paper, 7/25/94;9/10/94

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

SITE AREA EMERGENCY - 6.1.3.a

IC Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 100 mRem Total Effective Dose Equivalent (TEDE) or 500 mRem Thyroid-CDE Dose for the actual or projected duration of the release

EAL

Dose assessment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL: • TEDE 4-Day Dose ≥ **1.0E+02 mRem** • Thyroid-CDE Dose ≥ **5.0E+02 mRem**

MODE - All

BASIS

The TEDE 4-Day Dose of 100 mRem corresponds directly to the NUMARC dose of 100 mRem. The Thyroid-CDE Dose of 500 mRem corresponds directly to the NUMARC dose of 500 mRem.

Dose Assessment using actual meteorological data provides an accurate indication of release magnitude. The use of dose assessment based EALs is therefore preferred over the use of Release Rate based EALs which utilize calculations which have built-in inaccuracies because ODCM default Meteorological data is used. **Imminent** is defined as expected to occur within 2 hours.

Dose Assessment using actual meteorological data provides an accurate indication of release magnitude. The use of Dose Assessment based EALs is therefore preferred over the use of Release Rate based EALs which utilize calculations which have built-in inaccuracies because ODCM default Meteorological data is used.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a General Emergency when actual or projected doses exceed EPA Protective Action Guidelines.

DISCUSSION

The EAL values provide a desirable gradient (one order of magnitude) between the Site Area Emergency and General Emergency classifications. No site allocation factor (.5) is used in this calculation due to the assumption that releases of this magnitude will be from one site.

The TEDE 4 Day Dose of 100 mRem is based on the 10CFR20 average annual population exposure limit. It is deemed that exposure less than this limit is not consistent with the Site Area Emergency classification description. The 500 mRem Thyroid LDE Dose was established to align with the 1:5 ratio used in EPA Protective Action Guidelines for Whole Body vs. Thyroid dose.

DEVIATION

NUMARC EAL AS1.1 (Classification based on noble gas release rate) is not desirable per NUMARC Draft White Paper dated 7-25-94;9-10-94. The classification could be under conservative if it were made on the basis of noble gas release rate.
Since dose assessment would continue in either case and the classification escalated if necessary, the impact from not having this EAL would be a delay in reaching the appropriate classification. This delay was deemed to be acceptable since in significant release situations, the plant operational conditions EALs should provide the anticipatory classifications necessary for the implementation of offsite protective measures.

REFERENCES

NUMARC NESP-007,AS1.3
EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
NUMARC Draft White Paper 7-25-94;9-10-94.

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

SITE AREA EMERGENCY - 6.1.3.b

IC Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 100 mrem Total Effective Dose Equivalent (TEDE) for the actual or projected duration of the release

EAL

Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **100 mRem/hr** **AND** Release is expected to continue for ≥ **15 minutes**

MODE - All

BASIS

An actual dose rate of 100 mrem/hr which is expected to continue for ≥ 15 minutes indicates a substantial radiological release which could exceed the 10CFR20 Average Annual Population exposure limit of 100 mrem TEDE using the assumption of a one hour release duration.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a General Emergency when actual or projected doses exceed EPA Protective Action Guidelines.

DISCUSSION

An actual dose of 100 mRem Total Effective Dose Equivalent (TEDE) is based on the 10CFR20 annual average population exposure limit. Measured dose rates will be taken at the Protected Area Boundary and a ≥ 15 minute threshold will be applied to be conservative. Unless otherwise indicated, the conversion from whole body dose to TEDE is 1:1.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AS1.4
EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

SITE AREA EMERGENCY - 6.1.3.c

IC Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 500 mRem Thyroid-CDE for the actual or projected duration of the release

EAL

Analysis of field survey samples at the Protected Area Boundary indicates EITHER one of the following:

- **≥ 5.24 E+02 CCPM**
- **≥ 4.63E-07 µCi/cc I-131**

MODE- All

BASIS

The Corrected Counts per Minute (CCPM) value is based on reading(s) obtained using a radiation count rate meter such as a RM-14 or E-140N with an HP260 probe attached. The Iodine-131 field survey sample concentration threshold is based on I-131 dose conversion factors (DCFs) from EPA-400. The thresholds are based on a Thyroid-CDE Dose Rate of 500 mRem/hr.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a General Emergency when actual or projected doses exceed EPA Protective Action Guidelines.

DISCUSSION

The release sample concentration calculations are as follows.

The sample concentration is calculated using the I-131 Dose Conversion Factor from EPA-400:

Solving the following equation for µCi/cc:

mRem/hr = (µCi/cc)(Dose Conversion Factor)

Then;

$$\textit{I-131 Sample Concentration} = \left(\frac{500 mRem/hr}{1.08E{+}09 mRem/\mu Ci/cc/hr}\right) \text{-}4.63E\text{-}07\ \mu Ci/cc$$

Where 1.08E+09
mRem/µCi/cc/hr is the Dose Conversion Factor from EPA-400, Table 5-4 and includes the EPA breathing rate.

The Corrected Counts per Minute reading is calculated using the I-131 Sample concentration, and factors for using an RM-14 or E-140N with an HP260 probe.

Solving the following equation for CCPM:

$$\mu Ci/cc = \frac{CCPM}{(\text{Detector Efficiency})(\text{Collection Efficiency})(\text{Conversion Factor - DPM to } \mu Ci)(\text{Volume - ft}^3)(\text{Conversion Factor - cc to ft}^3)}$$

Then;

CCPM =

$$(4.63E\text{-}07 \mu Ci/cc)(0.9)(2.22E{+}06 DPM/\mu Ci)(2.00E\text{-}03 CCPM/DPM)(10 ft^3)(2.832E{+}04 cc/ft^3)$$

= 5.24E+02 CCPM

Where:

2.00E-03 =	Detector Efficiency - CCPM/DPM
0.9 (or 90%) =	Collection Efficiency
2.22E+06 =	Conversion factor - DPM/µCi
10 ft^3 =	Volume
2.832E+04 =	Conversion factor - cc to ft^3
CCPM =	Corrected Counts per Minute using an RM-14 or E-140N with an HP260 probe.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AS1.4
EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
FEMA REP-2, Rev. 1/July 1987, Guidance on Offsite Emergency Radiation Measurement Systems, Phase-1 Airborne Release
SORC Summary 07/10/89
RPCS Thyroid Dose Commitment Factor Paper (NRP-94-0557), 11-22-94.

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

GENERAL EMERGENCY - 6.1.4.a

IC Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 1000 mRem Total Effective Dose Equivalent (TEDE) or 5000 mRem Thyroid-CDE Dose for the actual or projected duration of the release

EAL

Dose assessment indicates EITHER one of the following at the MEA or beyond as calculated on the SSCL: • TEDE 4-Day Dose ≥ **1.0E+03 mRem** • Thyroid-CDE Dose ≥ **5.0E+03 mRem**

MODE - All

BASIS

The TEDE 4-Day Dose of 1000 mRem corresponds directly to the NUMARC dose of 1000 mRem which exceeds EPA Protective Action Guideline Criteria for a General Emergency. The Thyroid-CDE Dose of 5000 mRem corresponds directly to the NUMARC dose of 5000 mRem.

Barrier Analysis

N/A

ESCALATION CRITERIA

N/A

DISCUSSION

No site allocation factor (.5) is used in this calculation due to the assumption that releases of this magnitude will be from one site.

DEVIATION

NUMARC EAL AG1.1 (Classification based on noble gas release rate) is not desirable per NUMARC Draft White Paper dated 7-25-94;9-10-94. The classification could be under conservative if it were made on the basis of noble gas release rate.
Since dose assessment would continue in either case and the classification escalated if necessary, the impact from not having this EAL would be a delay in reaching the appropriate classification. This delay was deemed to be acceptable since in significant release situations, the plant operational conditions EALs should provide the anticipatory classifications necessary for the implementation of offsite protective measures.

REFERENCES

NUMARC NESP-007,AG1.3
EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
NUMARC Draft White Paper 7-25-94; 9-10-94.

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

GENERAL EMERGENCY - 6.1.4.b

IC Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 1000 mrem Total Effective Dose Equivalent (TEDE) for the actual or projected duration of the release

EAL

Dose Rate measured at the Protected Area Boundary or beyond EXCEEDS **1000 mRem/hr** **AND** Release is expected to continue for ≥ **15 minutes**

MODE - All

BASIS

An actual dose of 1000 mRem/hr indicates the EPA Protective Action Guide may be exceeded for the general public.

Barrier Analysis

N/A

ESCALATION CRITERIA

N/A

DISCUSSION

An actual dose of 1000 mRem Total Effective Dose Equivalent (TEDE) is based on the EPA protective action guidance which indicates that public protective actions are indicated if the dose exceeds 1 Rem whole body. This is consistent with the emergency class description for a General Emergency. A release rate equivalent to 1000 mRem/hr boundary dose rate may also be used if TEDE projections are not available. Unless otherwise indicated, the conversion from whole body dose to TEDE is 1:1.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AG1.4
EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents

6.0 Radiological Releases/Occurrences

6.1 Gaseous Effluent Release

GENERAL EMERGENCY - 6.1.4.c

IC Boundary Dose Resulting from an Actual or Imminent Release of Gaseous Radioactivity Exceeds 5000 mRem Thyroid-CDE for the actual or projected duration of the release

EAL

Analysis of field survey samples at the Protected Area Boundary indicates EITHER one of the following: • **≥ 5.24E+03 CCPM** • **≥ 4.63E-06 µCi/cc I-131**

MODE - All

BASIS

The Corrected Counts per Minute (CCPM) value is based on reading(s) obtained using an RM-14 or E-140N with an HP260 probe attached. The Iodine-131 field survey sample concentration threshold is based on I-131 dose factors from EPA-400. The thresholds are based on a dose rate of 5000 mRem/hr thyroid for I-131.

Barrier Analysis

N/A

ESCALATION CRITERIA

N/A

DISCUSSION

No site allocation factor (.5) is used in this calculation due to the assumption that releases of this magnitude will be from one site.

The release sample concentration calculations are as follows.

The sample concentration is calculated using the I-131 Dose Factor from EPA-400:

Solving the following equation for μCi/cc:

mRem/hr = (μCi/cc)(Dose Conversion Factor)

Then;

$$\textit{I-131 Sample Concentration} = \left(\frac{5000\ mRem\ /hr}{1.08E{+}09\ mRem\ /\mu Ci/cc/hr}\right) = 4.63E{-}06\ \mu Ci/cc$$

Where 1.08E+09 mRem/μCi/cc/hr is the Dose conversion factor from EPA-400, Table 5-4 and includes the EPA breathing rate.

The Corrected Counts per Minute reading is calculated using the I-131 Sample concentration, and factors for using an RM-14 or E-140N with an HP260 probe.

Solving the following equation for CCPM:

$$\mu Ci/cc = \frac{CCPM}{(\text{Detector Efficiency})(\text{Collection Efficiency})(\text{Conversion Factor - DPM to } \mu Ci/cc)(\text{Volume - } ft^3)(\text{Conversion Factor - cc to } ft^3)}$$

Then;

CCPM =

$$(4.63E{-}06\mu Ci/cc)(0.9)(2.22E{+}06 DPM/\mu Ci)(2.00E{-}03 CCPM/DPM)(10 ft^3)(2.832E{+}04 cc/ft^3)$$

= 5.24E+03 CCPM

Where:

2.00E-03 =	Detector Efficiency - CCPM/DPM
0.9 (or 90%) =	Collection Efficiency
2.22E+06 =	Conversion factor - DPM/μCi
10 ft^3 =	Volume
2.832E+04 =	Conversion factor - cc to ft^3
CCPM =	Corrected Counts per Minute using an RM-14 or E-140N with an HP260 probe.

DEVIATION

None

REFERENCES

NUMARC NESP-007,AG1.4
EPA 400-R-92-001, Manual of Protective Action Guides and Protective Actions for Nuclear Incidents
FEMA REP-2, Rev. 1/July 1987, Guidance on Offsite Emergency Radiation Measurement Systems, Phase-1 Airborne Release
SORC Summary 07/10/89
RPCS Thyroid Dose Commitment Factor Paper (NRP-94-0557); 11-22-94.

6.0 Radiological Releases/Occurrences

6.2 Liquid Effluent Release

UNUSUAL EVENT - 6.2.1

IC Any Unplanned Release of Liquid Radioactivity to the Environment that Exceeds Two Times the Radiological Technical Specifications for 60 minutes or longer

EAL

Valid Alarm from ANY one of the following RMS Channels:
- Containment Fan Coil Process (R13)
- Liquid Radwaste Disposal Process (R18)
- Steam Generator Blowdown Process (R19)
- Chemical Waste Basin Process (2R37)

AND
Sample analysis of liquid effluent indicates concentration in excess of **2 times Tech. Spec. limits**
AND
Release continues for ≥ **60 minutes** after the alarm occurs

MODE - All

BASIS

Releases in excess of 2 times Technical Specifications that continue for ≥ 60 minutes represent an uncontrolled situation and hence a potential degradation in the level of safety. The final integrated dose is very low and is not the primary concern. Rather it is the degradation in plant control implied by the fact that the release was not isolated within 60 minutes. The calculation called for in this EAL should also be conducted whenever a liquid release occurs for which a radioactive release authorization wasn't prepared or that exceeds the conditions on the radioactive release authorization (e.g. minimum dilution, alarm setpoints, etc).

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert when effluents increase to 200 times Technical Specification limits.

DISCUSSION

An indication or report is considered to be valid when it is verified by:

1. An instrument channel check.
2. Indications on related or redundant instruments.
3. By direct observation by plant personnel.

Verification efforts should be completed within 15 minutes.

It is not intended that the release be averaged over 60 minutes, but exceed 2 times Technical Specifications limit for 60 minutes or longer. Further, it is intended that the event be declared as soon as it is determined that the release will exceed 2 times the limit for 60 minutes or longer.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AU1.2
Off-Site Dose Calculation Manual, Section 1.0 - Liquid Effluents
Technical Specifications 3.11.1.1 (U1 and U2)

6.0 Radiological Releases/Occurrences

6.2 Liquid Effluent Release

ALERT - 6.2.2

IC Any Unplanned Release of Liquid Radioactivity to the Environment that Exceeds 200 Times the Radiological Technical Specifications for 15 minutes or longer

EAL

Valid Alarm from ANY one of the following RMS Channels:
- Containment Fan Coil Process (R13)
- Liquid Radwaste Disposal Process (R18)
- Steam Generator Blowdown Process (R19)
- Chemical Waste Basin Process (2R37)

AND
Sample analysis of liquid effluent indicates concentration in excess of **200 times Tech. Spec. limits**
AND
Release continues for ≥ **15 minutes** after the alarm occurs

MODE - All

BASIS

Releases in excess of 200 times Technical Specifications that continue for ≥ 15 minutes represent an uncontrolled situation and hence a potential degradation in the level of safety. This event escalates the Unusual Event by a factor of 100. The required release duration was reduced to 15 minutes in recognition of the increased severity of a release of this magnitude.. The calculation called for in this EAL should also be conducted whenever a liquid release occurs for which a radioactive release authorization wasn't prepared or that exceeds the conditions on the radioactive release authorization (e.g. minimum dilution, alarm setpoints, etc).

Barrier Analysis

N/A

ESCALATION CRITERIA

N/A

ESCALATION CRITERIA

N/A

DISCUSSION

The radiation monitors selected for this EAL monitor radioactivity before it is discharged into the Delaware River and warns personnel of an excessive amount of radioactivity (greater than Technical Specification limits) being released to the environment.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA1.2
Off-Site Dose Calculation Manual, Section 1.0 - Liquid Effluents

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

UNUSUAL EVENT - 6.3.1.a

IC Unplanned increase in Plant Radiation

EAL

Unplanned increase in-plant radiation levels inside the Protected Area by a factor **1000** over normal as indicated by EITHER one of the following: • Permanent or portable Area Radiation Monitors • General Area Radiological Survey

MODE - All

BASIS

The term "**unplanned**" is defined as those events which are not associated with a pre-planned evolutions such that radiation levels are increasing for reasons which cannot be immediately explained. Unexpected increases in in-plant radiation levels represent a degradation in the control of radioactive material and a potential degradation in the level of safety of the plant. Planned evolutions which cause elevated radiation levels are not covered by this EAL.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert when radiation levels increase in areas required for the safe shutdown of the plant which would impede access to these areas.

DISCUSSION

Normal level is considered as the highest reading in the past 24-hours excluding current peak values. RMS strip charts, RMS computer and/or SPDS can be used to confirm these values.

An area monitor reading is considered to be valid when it is verified by:

1. An instrument channel check indicates the monitor has not failed.
2. Indications on related or redundant instrumentation.
3. Direct observation by plant personnel.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AU2.4

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

UNUSUAL EVENT - 6.3.1.b

IC Unplanned increase in Plant Radiation

EAL

An uncontrolled level decrease in the Refueling Cavity as indicated by EITHER one of the following:
- Visual observation
- RVLIS - Refueling Mode

MODE - 6

BASIS

This EAL condition indicates a possible failure of the Refueling Cavity Seal or RHR System that results in inventory loss from the Refueling Cavity when flooded. Coverage of these events is appropriate due to the potential for increased doses to plant staff. These events have a long lead time relative to potential for radiological release outside the site boundary, thus the impact to public health and safety is very low. Classification as an Unusual Event is warranted as a precursor to a more serious event.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert as a result of uncovery of a fuel assembly and/or indication of high radiation levels on the refueling floor.

DISCUSSION

Design of the Refueling Cavity is such that a liner failure in these volumes is unlikely; however, should such a failure occur, it would come under this EAL. If uncovery of fuel elements occur

or if there is indication of high radiation levels on the refuel floor then the event will be classified as an Alert.

During refueling operations the Reactor Vessel and Refuel Cavity are flooded. During fuel handling operations, the Fuel Transfer Tube will connect the Reactor Cavity and the Spent Fuel Pool. An unexplained lowering of Refuel Cavity level or Spent Fuel Pool level can be an indication that these volumes are draining. A drop in Reactor Cavity and Spent Fuel Pool level may result in a Spent Fuel Pool low level alarm. This alarm would be validated by visual observation of lowering level in the Refuel Cavity/Spent Fuel Pool.

DEVIATION

NUMARC states that this EAL will be applicable in all modes of operation. In modes other than Mode 6 the Reactor Vessel head will be fully tensioned and there will be no interconnection between the Refueling Cavity and the Spent Fuel Pool. In other modes, a loss of Reactor Vessel inventory is addressed in Section 3. Uncontrolled loss of water level in the Spent Fuel Pool, however, is classified under EAL 6.3.1.c in all modes of operation.

REFERENCES

NUMARC NESP-007, AU2.1
OP-AR.ZZ-0003(Q) OHA-C35
OP-AB.FUEL-0002(Q)

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

UNUSUAL EVENT - 6.3.1.c

IC Unexpected increase in Plant Radiation

EAL

Valid SFP Low Level alarm - **OHA C-35** **AND** Visual observation of an uncontrolled level decrease in the Spent Fuel Pool

MODE - All

BASIS

These EAL conditions indicate a possible failure of the Spent Fuel Pool Cooling System that results in inventory loss from the Spent Fuel Pool. This EAL also works in conjunction with the loss of Refueling Cavity EAL for Mode 6 operations, with the Spent Fuel Pool and Refueling Cavity connected via the Fuel Transfer Canal. Coverage of this event is appropriate due to the potential for increased doses to plant staff. This event has a long lead time relative to potential for radiological release outside the site boundary, thus the impact to public health and safety is very low. Classification as an Unusual Event is warranted as a precursor to a more serious event.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert as a result of uncovery of a fuel assembly and/or indication of high radiation levels in the fuel handling building.

DISCUSSION

Design of the Spent Fuel Pool is such that a liner failure in this volume is unlikely; however, should such a failure occur, it would be classified under this EAL. Lowering of water level in the Spent Fuel

Pool to below the level of the spent fuel bundles may result in an increase in the airborne contamination level in the Fuel Handling Building. If uncovery of fuel elements occur or if there is indication of high radiation levels in the fuel handling building then the event will be classified as an Alert.

This alarm would be validated by visual observation of lowering level in the Spent Fuel Pool. The added requirement for an uncontrolled decrease in SFP level with a low level alarm is included to allow normal makeup to recover level for minor level deviations due to evaporation losses, etc.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AU2.2
OP-AR.ZZ-0003(Q) OHA-C35
OP-AB.FUEL-0002(Q)

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

ALERT - 6.3.2.a

IC Release of Radioactive Material or increases in Radiation Levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown

EAL

Unplanned increase in-plant radiation levels inside the Protected Area by a factor **1000** over normal as indicated by EITHER one of the following:

- Permanent or portable Area Radiation Monitors
- General Area Radiological Survey

AND

Unplanned Dose Rate > **2000 mRem/hr** above normal in any area of the plant which requires access to maintain plant safety functions (excluding the Control Room or CAS)

MODE - All

BASIS

The term "**unplanned**" is defined as those events which are not associated with a pre-planned evolutions such that radiation levels are increasing for reasons which cannot be immediately explained. The EAL addresses radiation levels which would impede operation of systems required to maintain safe operations or to establish or maintain cold shutdown. Radiations levels could be indicated by ARM or radiological survey. It is the impaired ability to operate the plant that results in the actual or potential substantial degradation of the level of safety of the plant. The Dose Rate of 2000 mRem/hr was chosen as a threshold based upon NAP-24 Administrative Dose Limits and Extension criteria which has Senior Radiation Protection Supervisor approval required prior to exceeding 2000 mRem/yr. This value is low enough to ensure classification of an Alert before personnel access is severely hampered and high enough to allow any increase in normal radiation level, by a factor of 1000, to be classified as an Unusual Event per EAL 6.3.1.a.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when loss of control of radioactive materials causes significant offsite doses.

DISCUSSION

Emergency Coordinator judgement must be used to determine areas that contain systems that must be operated manually, or require local surveillances to assure reliable support of safe plant operation for the conditions that exist. Areas having equipment that must be operated locally during an accident and areas along associated access routes require HP coverage and continuous update of changing radiological conditions.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA3.2
NC.NA-AP.ZZ-0024(Q)- Radiation Protection Program

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

ALERT - 6.3.2.b

IC Release of Radioactive Material or increases in Radiation Levels within the facility that impedes operation of systems required to maintain safe operations or to establish or maintain cold shutdown

EAL

Unplanned radiation levels > **15 mRem/hr** in EITHER one of the following:
- The Control Room
- The Security Central Alarm Station (CAS)

MODE - All

BASIS

The term "**unplanned**" is defined as those events which are not associated with a pre-planned evolutions such that radiation levels are increasing for reasons which cannot be immediately explained. The EAL addresses radiation levels which would jeopardize continuous occupancy of the Control Room or Security CAS. Radiations levels could be indicated by ARM or radiological survey. It is the impaired ability to operate the plant that results in the actual or potential substantial degradation of the level of safety of the plant. In addition, unplanned increases in in-plant radiation levels represent a degradation in the control of radioactive materials and represent a degradation in the level of safety of the plant.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when loss of control of radioactive materials causes significant off-site doses.

DISCUSSION

The Control Room and Security Central Alarm Station general area radiation level threshold is set at 15 mr/hr and was chosen because continuous occupancy is required. This is consistent with General Design Criteria 19, which addresses continuous occupancy of the Control Room for 30 days after an accident. Additionally, since the Control Room is shielded, this radiation level represents a serious loss of control of radioactive material.

The Security Secondary Alarm Station (SAS) was excluded because it is fully redundant to the Security CAS. For a radiological event, SAS would be evacuated, with all Security functions performed by the CAS.

Events which may require Control Room evacuation to establish or maintain Cold Shutdown will be classified per Section 8 EALs.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA3.1

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

ALERT - 6.3.2.c

IC Major Damage to Irradiated Fuel or Loss of Water Level that has or will result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel

EAL

Major Damage to Irradiated Fuel reported in the Fuel Handling Bldg
AND
Valid High Alarm is received on EITHER one of the following:

- R5
- R32

AND
Valid High Alarm received from EITHER one of the following RMS channels:

- R41
- R45

MODE - All

BASIS

Major Damage to an irradiated fuel bundle that results in High Fuel Handling Building Radiation Monitor alarm coincident with a Plant Vent Exhaust Process Radiation Monitor alarm warrants declaration of an Alert, due to the potential for an offsite release exceeding the Technical Specification limit. The intent of this EAL is to classify those events that result in the actual release of fission products from an irradiated Fuel Bundle, due to physical damage. Events that result in increased radiation levels due to shine, as a result of decreased shielding, but do not involve a release of fission products should not be classified under this EAL, but should be classified EAL 6.3.2.e, when those conditions exist. R45 was selected as a plant vent monitor for those events which result in R41 being deenergized or Out Of Service due to the magnitude of the release.

Major Damage is defined as physical damage to an Irradiated Fuel Bundle that results from either dropping or physical contact with other components, such that the magnitude of the

damage specifically results in actuation of an Area Radiation Alarm. **Valid** is defined as the High alarm occurring as a result of the damage to the irradiated fuel bundle.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to a Site Area Emergency when loss of control of radioactive materials causes significant offsite doses.

DISCUSSION

The Fuel Handling Building Area Monitors provide an early warning of developing problems which may be related to a damaged fuel bundle. The Plant Vent Exhaust Rad Monitors are Process Monitors and are designed to detect a release of Fission Products. Hence, they are included as part of the EAL threshold, to confirm the magnitude of damage to an irradiated fuel bundle.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA2.1
OP-AR.ZZ-0003(Q) OHA-C35
OP-AB.FUEL-0002(Q)
NUREG/CR-4982
NRC Information Notice no. 90-08

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

ALERT - 6.3.2.d

IC Major Damage to Irradiated Fuel or Loss of Water Level that has or will result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel

EAL

Major Damage to Irradiated Fuel reported in the Containment
AND
Valid High Alarm is received on ANY one of the following:

- R2
- R10A
- R10B

AND
Valid High Alarm received from ANY one of the following RMS channels:

- R11A
- R12A
- R12A

MODE - All

BASIS

Major Damage to an irradiated fuel bundle that result in a High Containment Area Radiation Monitor alarm coincident with a Containment Process Radiation Monitors alarm warrants declaration of an Alert, due to the potential for an offsite release exceeding the Technical Specification limit. The intent of this EAL is to classify those events that result in the potential release of fission products from an irradiated Fuel Bundle, due to physical damage. Events that result in increased radiation levels due to shine, as a result of decreased shielding, but do not involve a release of fission products should not be classified under this EAL, but should be classified EAL 6.3.2.e, when those conditions exist.

Major Damage is defined as physical damage to an Irradiated Fuel Bundle that results from either dropping or physical contact with other components, such that the magnitude of the

damage specifically results in actuation of an Area Radiation Alarm. **Valid** is defined as the High alarm occurring as a result of the damage to the irradiated fuel bundle.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to a Site Area Emergency when loss of control of radioactive materials causes significant offsite doses.

DISCUSSION

The Containment Area Monitors provide an early warning of developing problems which may be related to a damaged fuel bundle. The Containment Rad Monitors are Process Monitors and are designed to detect a release of Fission Products. Hence, they are included as part of the EAL threshold, to confirm the magnitude of damage to an irradiated fuel bundle.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA2.1
OP-AR.ZZ-0003(Q) OHA-C35
OP-AB.FUEL-0002(Q)
NUREG/CR-4982
NRC Information Notice no. 90-08

6.0 Radiological Releases/Occurrences

6.3 In-Plant Radiation Occurrences

ALERT - 6.3.2.e

IC Major Damage to Irradiated Fuel or Loss of Water Level that has or will result in the Uncovering of Irradiated Fuel Outside the Reactor Vessel

EAL

Unplanned, increase ≥ **2000 mRem/hr** on any one of the following Rad monitors or by general area rad survey:

- R2 Containment, General Area Low
- R5 Fuel Handling Building Area Fuel Pool
- R9 Fuel Handling Building Fuel Storage Area
- R32A Spent Fuel Handling Crane, Area Monitor

MODE - All

BASIS

This EAL indicates a possible failure of the Refueling Cavity Seal, RHR System, or Spent Fuel Pool Cooling System that results in inventory loss from the Refueling Cavity when flooded or the Spent Fuel Pool. Design of the Refueling Cavity and Spent Fuel Pool is such that a liner failure in these volumes is unlikely; however, should such a failure occur, it would come under this EAL. Lowering of water level in the Spent Fuel Pool to such a value as to cause Dose Rates to increase to this value will result in evacuation of the local areas. Uncovery of irradiated fuel elements can lead to their fuel clad failure due to loss of cooling.

The term "**unplanned**" is defined as those events which are not associated with a pre-planned evolutions such that radiation levels are increasing for reasons which cannot be immediately explained. The EAL addresses radiation levels which would impede operation of systems required to continue efforts to stop the loss of Refueling water level. Radiations levels could be indicated by ARM or radiological survey. The Dose Rate of 2000 mRem/hr was chosen as a threshold based upon NAP-24 Administrative Dose Limits and Extension criteria which has Senior Radiation Protection Supervisor approval required prior to exceeding 2000 mRem/yr. This value is low enough to ensure classification of an Alert before personnel access is severely

hampered and high enough to allow any unplanned increase in normal radiation level, by a factor of 1000, to be classified as an Unusual Event per EAL 6.3.1.a.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency when loss of control of radioactive materials causes significant offsite doses.

DISCUSSION

It is understood that a decrease in Refueling Cavity water level will cause Dose Rates to increase due to the uncovery of irradiated Reactor components other than a spent fuel assembly. However, Dose Rates in excess of 2 Rem/hr indicate a loss of level such that recovery options may be limited and thus an Alert declaration is warranted.

DEVIATION

None

REFERENCES

NUMARC NESP-007, AA2.3 and AA2.4
OP-AR.ZZ-0003(Q) OHA-C35
OP-AB.FUEL-0002(Q)
NUREG/CR-4982
NRC Information Notice no. 90-08

7.0 Electrical Power

7.1 Loss of AC Power Capabilities

UNUSUAL EVENT - 7.1.1

IC Loss of All Offsite Power to Vital Buses for Greater Than 15 Minutes

EAL

Loss of 13kV Offsite Power **Availability to** ALL **4KV Vital Buses** as evidenced by a **loss of function** of BOTH of the following Station Power Transformers:
- 13(23)
- 14(24)

AND
> 15 minutes have elapsed

MODE - All

BASIS

Loss of Station Power Transformers 13(23) and 14(24) will result in a loss of offsite power to all 4KV Vital Busses for Unit 1 (Unit 2). The intent of this EAL is to identify a loss of off-site 500 kV or 13 kV power availability such that the 13(23) and 14(24) Station Power Transformers are unable to provide power to the 4kV Vital Buses. Events which result in all available 4kV Vital Buses being supplied by their respective Diesel Generator with off-site power available should not be classified under this EAL (e.g.; all available 4kV vital buses in blackout loading during shutdown conditions due to inadvertent SEC Mode 2 "Blackout" loading with off-site power available). Prolonged loss of AC power reduces redundancy and potentially degrades the level of safety by increasing plant vulnerability to a complete loss of AC power. Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Resetting of the 15 minute "clock" should not occur until a reliable source of power has been restored to the vital bus. The term Power **Availability to** ALL **4KV Vital Busses** is defined as the ability to restore off-site power to the Vital Bus (not just an open breaker which can be repower the vital bus from an offsite source). The term **loss of function** is defined as the inability of these transformers to provide reliable offsite power due to transformer failure or other problems associated with equipment/power lines normally available.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to the Alert classification level on loss of power to two 4KV Vital Buses.

DISCUSSION

All Emergency Operating Procedures, except EOP-LOPA-1, are written assuming that at least two 4KV Vital Busses have power available. Two 4KV Vital Buses are required to ensure that at least one full train of ESF equipment is available. In Modes 1 and 2, a loss of all offsite power will result in or require a reactor trip and transition into the EOP Network. For Modes 3 and 4, OP-AB.LOOP procedures provide additional guidance.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SU1
EOP-TRIP-1
EOP-LOPA-1
OP-AB.LOOP-0001(Q)
OP-AB.LOOP-0002(Q)
OP-AB.4KV-0001(Q)
OP-AB.4KV-0002(Q)
OP-AB.4KV-0003(Q)
SGS 1(2) Technical Specifications Section 3/4.8

7.0 Electrical Power

7.1 Loss of AC Power Capabilities

ALERT - 7.1.2.a

IC AC power capability to vital buses reduced to a single power source for greater than 15 minutes such that any additional single failure would result in station blackout

EAL

Loss of 4.16 KV Vital Bus Power Sources (Offsite and/or Onsite) which results in the **availability** of **only one** 4.16 KV Vital Bus Power Source (Offsite or Onsite) AND > **15 Minutes** have elapsed

MODE - 1, 2, 3, 4

BASIS

The condition indicated by this EAL is the degradation of offsite and onsite power systems supply to the 4KV Vital Buses, with two separate concerns. First, this EAL declares an Alert for conditions such that any additional, single power source failure would result in a loss of power to ALL 4KV Vital Buses. Second, an Alert would also be declared for < 2 4KV Vital Buses energized to be consistent with EOP-LOPA-1 entry conditions. At least 2 4KV Vital Buses are required to ensure one full train of ESF equipment is available for plant control. Prolonged loss of AC power reduces redundancy and potentially degrades the level of safety by increasing plant vulnerability to a complete loss of AC power. "**Availablity**" means that the power source can be aligned to provide power to the bus. Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Resetting of the 15 minute "clock" should not occur until a reliable source of power has been restored to the vital bus.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to the Site Area Emergency classification level on loss of power to all 4KV Vital Buses for > 15 minutes.

DISCUSSION

The intent of this EAL is to classify events strictly as they relate to 4KV Vital Bus power availability. For the purposes of the EAL, availability of Diesel Generators that have not been challenged to start during degradation of AC power sources to the 4KV Vital Buses should be based on meeting Technical Specification action requirements for loss of offsite AC power sources. There are two separate conditions addressed by this EAL.

The first condition is directly related to the Initiating Condition, and is precautionary in classifying the event as an Alert if a single failure of one power source could result in a total loss of all 4KV Vital power. Should such a loss actually occur, it would result in classification at the Site Area Emergency Level. Examples of this condition are:

1) Failure of the 13(23) Station Power Transformer with all Diesel Generators inoperable; or
2) loss of all offsite power with a failure of two Diesel Generators (results in only one 4KV Vital Bus energized by its associated Diesel Generator).

The second condition is unique to Salem Generating Station due to the three 4KV Vital Bus vs two trains of ESF equipment arrangement. Two energized 4KV Vital Buses are required to ensure the availability of one full train of ESF equipment. This threshold is consistent with EOP-LOPA-1 entry conditions used in the EOP Network.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SA5
EOP-TRIP-1
EOP-LOPA-1
OP-AB.LOOP-0001(Q)
OP-AB.LOOP-0002(Q)
OP-AB.4KV-0001(Q)
OP-AB.4KV-0002(Q)
OP-AB.4KV-0003(Q)
SGS 1(2) Technical Specifications Section 3/4.8

7.0 Electrical Power

7.1 Loss of AC Power Capabilities

ALERT - 7.1.2.b

IC Loss of All Offsite Power and All Onsite AC Power to Vital 4 KV Buses While the Plant is in Cold Shutdown or Refueling Mode

EAL

Loss of power to **All** 4KV Vital Buses **AND** **> 15 minutes** have elapsed

MODE - 5, 6, Defueled

BASIS

Loss of all AC power compromises all plant safety systems requiring electric power including RHR, ECCS, Containment Fan Coil Unit, Spent Fuel Pool Cooling and Service Water. When in cold shutdown, refueling, or defueled modes, this event can be classified as an Alert. This is because of the significantly reduced decay heat load with lower temperatures and pressures. Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Resetting of the 15 minute "clock" should not occur until a reliable source of power has been restored to the vital bus.

Barrier Analysis

None

ESCALATION CRITERIA

Escalation to a Site Area Emergency would occur on Radiological Release (EAL Section 6.0), or on the long term inability to remove Decay Heat (EAL Section 8.0).

DISCUSSION

In Modes 5, or 6, OP-AB.LOOP-0001(Q) provides guidance for maintaining plant control regardless of power remaining to the 4KV Vital Buses.

It is assumed that the plant will be maintained in a cold shutdown condition; if the plant is not able to be maintained in this mode then escalation to Site Area Emergency would be appropriate based on Loss of Decay Heat Removal Capability EALs in Section 8.0.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SA1
OP-AB.LOOP-0001(Q)
OP-AB.4KV-0001(Q)
OP-AB.4KV-0002(Q)
OP-AB.4KV-0003(Q)
SGS 1(2) Technical Specifications Section 3/4.8

7.0 Electrical Power

7.1 Loss of AC Power Capabilities

ALERT - 7.1.2.c

IC Loss of All Offsite Power and All Onsite AC Power to Vital 4 KV Buses While the Plant is in Cold Shutdown or Refueling Mode

EAL

Loss of power to **All** 4KV Vital Buses **AND** **> 15 minutes** have elapsed

MODE - 5, 6, Defueled

BASIS

Loss of all AC power compromises all plant safety systems requiring electric power including RHR, ECCS, Containment Fan Coil Unit, Spent Fuel Pool Cooling and Service Water. When in cold shutdown, refueling, or defueled modes, this event can be classified as an Alert. This is because of the significantly reduced decay heat load with lower temperatures and pressures. Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Resetting of the 15 minute "clock" should not occur until a reliable source of power has been restored to the vital bus.

Barrier Analysis

None

ESCALATION CRITERIA

Escalation to a Site Area Emergency would occur on Radiological Release (EAL Section 6.0), or on the long term inability to remove Decay Heat (EAL Section 8.0).

DISCUSSION

In Modes 5, or 6, OP-AB.LOOP-0001(Q) provides guidance for maintaining plant control regardless of power remaining to the 4KV Vital Buses.

It is assumed that the plant will be maintained in a cold shutdown condition; if the plant is not able to be maintained in this mode then escalation to Site Area Emergency would be appropriate based on Loss of Decay Heat Removal Capability EALs in Section 8.0.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SA1
OP-AB.LOOP-0001(Q)
OP-AB.4KV-0001(Q)
OP-AB.4KV-0002(Q)
OP-AB.4KV-0003(Q)
SGS 1(2) Technical Specifications Section 3/4.8

7.0 Electrical Power

7.1 Loss of AC Power Capabilities

SITE AREA EMERGENCY - 7.1.3

IC Loss of All Offsite Power and Loss of All Onsite AC Power to Vital AC Buses

EAL

Loss of power to **All** 4KV Vital Buses **AND** **> 15 minutes** have elapsed

MODE - 1, 2, 3, 4

BASIS

Loss of power to Station Power Transformers 13 and 14 (23 and 24) will result in a loss of all offsite power to all 4KV Vital Buses for Unit 1 (Unit 2). With a failure of the Emergency Diesels to energize the 4KV Vital Buses, all plant safety system functions are compromised. Prolonged loss of AC power will cause core uncovery and loss of Containment integrity. The high potential decay heat loads in these modes warrants classification at the Site Area Emergency level. Fifteen minutes is chosen as a threshold to exclude transient or momentary power losses. Resetting of the 15 minute "clock" should not occur until a reliable source of power has been restored to the vital bus.

Barrier Analysis

Prolonged loss of all AC power has the potential for causing a potential loss or loss of the Fission Product Barriers.

ESCALATION CRITERIA

Escalation to General Emergency classification level will be via fission product barrier loss, or prolonged loss of offsite and onsite AC power.

DISCUSSION

All Emergency Operating Procedures except EOP-LOPA-1 are written assuming that at least two 4KV Vital Buses have power available. In Modes 1 and 2, a loss of all offsite power will result in or require a reactor trip. The threshold for this EAL is consistent with actions required by EOP-LOPA-1 to maintain the RCS Barrier, performing a rapid plant cooldown and depressurizing in order to minimize the potential of Reactor Coolant Pump seal failure, while continuing attempts to restore 4KV Vital Bus power. In Mode 3, operation within OP-AB.LOOP-0002(Q) is allowed without transition to EOP-TRIP-1 and EOP-LOPA-1. In Mode 4, OP-AB.LOOP-0001(Q) provide guidance for maintaining plant control regardless of the status of the 4KV Vital Buses.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SS1
Station Blackout Coping Studies
EOP-TRIP-1
EOP-LOPA-1
OP-AB.LOOP-0002(Q)
OP-AB.4KV-0001(Q)
OP-AB.4KV-0002(Q)
OP-AB.4KV-0003(Q)
SGS 1(2) Technical Specifications Section 3/4.8

7.0 Electrical Power

7.1 Loss of AC Power Capabilities

GENERAL EMERGENCY - 7.1.4.a/7.1.4.b/7.1.4.c

IC Prolonged Loss of All Offsite Power and Prolonged Loss of All Onsite AC Power to Vital AC Buses

EAL

Loss of power to **ALL** 4KV Vital Buses
AND
> 15 minutes have elapsed
AND
ANY one of the following:
- Restoration of Power to **at least one** 4KV Vital Bus within **2 hours** is NOT likely
- CFST **Core Cooling RED Path**
- CFST **Heat Sink RED Path**

MODE - 1, 2, 3, 4

BASIS

Loss of all AC power compromises all plant safety systems requiring electric power. Prolonged loss of all AC power will lead to loss of Fuel Clad, RCS and Containment. Restoration of at least one 4 Vital KV Bus within 2 hours is based on the station blackout coping analysis, and may still lead to core damage. Prudence in timely Protective Action Recommendation is necessary since core damage may occur even if AC power is restored.

CFST Core Cooling RED Path and Heat Sink RED Path provide indication of the loss or potential loss of fission product barriers. Because plant control strategies are limited with a prolonged loss of all AC power, these should be considered to indicate a loss of the fuel clad barrier, and a potential loss of the RCS or Primary Containment barriers. These threshold conditions are used to provide the Emergency Coordinator criteria for declaring a General Emergency based on degrading fission product barriers.

Barrier Analysis

Prolonged loss of all AC power has the potential for causing a potential loss or loss of the Fission Product Barriers.

ESCALATION CRITERIA

N/A

DISCUSSION

This EAL is based on a station blackout occurring while the unit is in mode 1,2, 3 or 4 and power not being restored for > 2 hours.

The status and availability of DC power may limit or prevent restoration activities. When prolonged powering of inverters and DC loads has occurred without AC power available for the battery chargers, DC voltage will degrade. This degradation of DC power may limit monitoring and assessment capabilities as instrumentation and control power may not be available. Since monitoring of overall plant conditions will be difficult with no AC power, CFST indications for determining barrier loss are used.

The likelihood of restoring at least one emergency bus should be based on a realistic appraisal of the situation since a delay in an upgrade decision based on only a chance of mitigating the event could result in a loss of valuable time in preparing and implementing public protective actions. In addition, under these conditions, fission product barrier monitoring capability may be degraded. Although it may be difficult to predict when power can be restored, it is necessary to give the Emergency Coordinator a reasonable idea of how quickly he may need to declare a General Emergency based on two major considerations:

1. Are there any present indications that core cooling is already degraded to the point that loss or potential loss of fission product barriers is imminent?
2. If there are no present indications of such core cooling degradation, how likely is it that power can be restored in time to assure that a loss of two barriers with a potential loss of the third barrier can be prevented?

It is estimated that several hours are required to fully evacuate the 10 mile EPZ. Taking into consideration the above factors, declaring a General Emergency leaves sufficient time for the offsite authorities to implement Protective Actions well before a radioactive release would occur while providing sufficient time for on-site and off-site mitigation activities to restore AC power.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SG1
Station Blackout Coping Studies
EOP-TRIP-1
EOP-LOPA-1
OP-AB.LOOP-0002(Q)
OP-AB.4KV-0001(Q)
OP-AB.4KV-0002(Q)
OP-AB.4KV-0003(Q)
SGS 1(2) Technical Specifications Section 3/4.8

7.0 Electrical Power

7.2 Loss of DC Power Capabilities

UNUSUAL EVENT - 7.2.1.a

IC Unplanned Loss of Required DC Power While the Unit is in Either Cold Shutdown or Refueling Mode for Greater Than 15 Minutes

EAL

Unplanned decrease in Voltage to < **114VDC** on **All** 125VDC Vital buses **AND** > **15 minutes** have elapsed

MODE - 5, 6

BASIS

A loss of all DC power compromises the ability to monitor and control plant functions. 125 volt DC system provides control power to decay heat removal systems, diesel generator auxiliaries, plant alarm and indication circuits as well as the control power for the associated loads. If 125 volt DC power is lost for an extended period of time (greater than 15 minutes) critical plant functions required to maintain safe plant conditions may not operate and core uncovery with subsequent reactor coolant system and primary containment failure might occur. Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Although this EAL threshold is not met unless ALL 125 VDC is lost, EC judgement should be used to classify an event that result in loss of two of the three 125 VDC Vital buses if the loss causes an extensive loss of control of the plant and/or safety systems. Threshold values for bus voltage were derived from SC.MD-ST.125-0004(Q).

Barrier Analysis

None

ESCALATION CRITERIA

This event would be escalated to an Alert based on Loss of Decay Heat Removal Capability.

DISCUSSION

Two of the three 125 VDC buses are required operable in Modes 5 or 6 per Technical Specifications. This EAL addresses an unplanned loss of ALL 125 VDC buses such that Technical Specification requirements are not met. The minimum voltage value was selected based on the minimum allowable voltage (rounded to 114.0 for consistency and readability on Control Room analog indications) required for DC bus operability as per SC.MD-ST.125-0004(Q). Although continued operation may occur with degraded voltage, this value signifies the minimum operable voltage allowed. Loss of DC power may result in the loss of control power and instrumentation associated with equipment necessary to maintain Cold Shutdown conditions.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SU7
OP-AR.ZZ-0002(Q)
SGS 1(2) Technical Specifications, 3/4.8
CBD DE-CB, 125-0018(Q)
SC.MD-ST.125-0004(Q)

7.0 Electrical Power

7.2 Loss of DC Power Capabilities

UNUSUAL EVENT - 7.2.1.b

IC Unplanned Loss of Required DC Power While the Unit is in Either Cold Shutdown or Refueling Mode for Greater Than 15 Minutes

EAL

Unplanned decrease in Voltage to **< 25VDC** on **ALL** 28VDC Vital buses **AND** **> 15 minutes** have elapsed **AND** **Loss of control** of Safety Related Equipment **from the Control Room** has been **confirmed**

MODE - 5, 6

BASIS

A loss of all DC power compromises the ability to monitor and control plant functions. 28 volt DC system provides control power to provide for remote operation of switchgear, annunciators, vital instrument buses, communications to auxiliary control system relay cabinets for manual control of ESF equipment, non-safety related equipment, and 1RP4 Status Board indications. If 28 volt DC power is lost for an extended period of time (greater than 15 minutes) critical plant functions required to maintain safe plant conditions may not operate and core uncovery with subsequent reactor coolant system and primary containment failure might occur. The requirement to have a confirmed loss of equipment control was added to ensure that classification will not be made if sufficient voltage is available to operate the required safety related equipment. The term **loss of control** is defined as the inability to manipulate the required piece of equipment. The term **from the Control Room** ensures that local manipulation is excluded from this EAL. The term **confirmed** is defined as evidence of a failure to operate such as the absence of a confirmatory pushbutton bezel light with associated changes in system parameters not observed (flow, pressure, etc.). Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Threshold values for bus voltage were derived from SC.MD-ST.28D-0004(Q).

Barrier Analysis

None

ESCALATION CRITERIA

This event would be escalated to an Alert based on Loss of Decay Heat Removal Capability.

DISCUSSION

One 28 VDC bus is required operable in Modes 5 or 6 per Technical Specifications. This EAL addresses an unplanned loss of ALL 28 VDC buses such that Technical Specification requirements are not met. The minimum voltage value was selected based on the minimum allowable voltage (rounded to 25.0 for consistency and readability on Control Room analog indications) required for DC bus operability as per SC.MD-ST.28D-0004(Q). Loss of DC power may result in the loss of control power and instrumentation associated with equipment necessary to maintain Cold Shutdown conditions.

DEVIATION

Since Salem has a 28VDC system which is required to operate pushbutton controls in the Control Room, this EAL was added. There are only two 28VDC busses, and as such, a confirmation of the inability to operate safety related equipment was added to prevent inappropriate classification.

REFERENCES

NUMARC NESP-007, SU7
SGS 1(2) Technical Specifications, 3/4.8
CBD DE-CB, 28D-0019(Q)
SC.MD-ST.28D-0004(Q)

7.0 Electrical Power

7.2 Loss of DC Power Capabilities

SITE AREA EMERGENCY - 7.2.3.a

IC Loss of All Vital (1E) DC Power

EAL

Unplanned decrease in Voltage to < **114VDC** on **All** 125VDC Vital buses **AND** > **15 minutes** have elapsed

MODE - 1, 2, 3, 4

BASIS

A loss of all DC power compromises the ability to monitor and control plant functions. 125 volt DC system provides control power to engineered safety features actuation, diesel generator auxiliaries, plant alarm and indication circuits as well as the control power for the associated loads. If 125 volt DC power is lost for an extended period of time (greater than 15 minutes) critical plant functions required to maintain safe plant conditions may not operate and core uncovery with subsequent reactor coolant system and primary containment failure might occur. Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Although this EAL threshold is not met unless ALL 125 VDC is lost, EC judgement should be used to classify an event that result in loss of two of the three 125 VDC Vital buses if the loss causes an extensive loss of control of the plant and/or safety systems. Threshold values for each individual bus voltage were derived from SC.MD-ST.125-0004(Q).

Barrier Analysis

None

ESCALATION CRITERIA

There is no direct escalation to a General Emergency. Escalation would be based on other EALs indicating Radiological Release (EAL Section 6.0) or loss of Fission Product Barriers (EAL Section 3.0).

DISCUSSION

This EAL addresses plant conditions resulting in a loss of all 125VDC Vital power while the plant is in mode 1, 2, 3, or 4. The voltage selected was the minimum voltage on the bus based on the minimum allowable voltage required for DC Bus operability as per SC.MD-ST.125-0004(Q).. Although continued operation may occur with degraded voltage, this value signifies the minimum operable voltage allowed.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SS3
OP-AR.ZZ-0002(Q)
SGS 1(2) Technical Specifications, 3/4.8
CBD DE-CB.125-0018(Q)
SC.MD-ST.125-0004(Q)

7.0 Electrical Power

7.2 Loss of DC Power Capabilities

SITE AREA EMERGENCY - 7.2.3.b

IC Loss of All Vital (1E) DC Power

EAL

Unplanned decrease in Voltage to < **25VDC** on **ALL** 28VDC Vital buses **AND** > **15 minutes** have elapsed **AND** **Loss of control** of Safety Related Equipment **from the Control Room** has been **confirmed**

MODE - 1, 2, 3, 4

BASIS

A loss of all DC power compromises the ability to monitor and control plant functions. 28 volt DC system provides control power to provide for remote operation of switchgear, annunciators, vital instrument buses, communications to auxiliary control system relay cabinets for manual control of ESF equipment, non-safety related equipment, and 1RP4 Status Board indications. If 28 volt DC power is lost for an extended period of time (greater than 15 minutes) critical plant functions required to maintain safe plant conditions may not operate and core uncovery with subsequent reactor coolant system and primary containment failure might occur. The requirement to have a confirmed loss of equipment control was added to ensure that classification will not be made if sufficient voltage is available to operate the required safety related equipment. The term **loss of control** is defined as the inability to manipulate the required piece of equipment. The term **from the Control Room** ensures that local manipulation is excluded from this EAL. The term **confirmed** is defined as evidence of a failure to operate such as the absence of a confirmatory pushbutton bezel light with associated changes in system parameters not observed (flow, pressure, etc.). Fifteen (15) minutes was chosen to exclude transient or momentary power losses. Threshold values for bus voltage were derived from SC.MD-ST.28D-0004(Q).

Barrier Analysis

None

ESCALATION CRITERIA

There is no direct escalation to a General Emergency. Escalation would be based on other EALs indicating Radiological Release (EAL Section 6.0) or loss of Fission Product Barriers (EAL Section 3.0).

DISCUSSION

This EAL addresses plant conditions resulting in a loss of all 28VDC Vital power while the plant is in Mode 1, 2, 3, or 4. The voltage selected was the minimum voltage on the bus based on the minimum allowable voltage required for DC Bus operability as per SC.MD-ST.28D-0004(Q).

DEVIATION

Since Salem has a 28VDC system which is required to operate pushbutton controls in the Control Room, this EAL was added. There are only two 28VDC busses, and as such, a confirmation of the inability to operate safety related equipment was added to prevent inappropriate classification.

REFERENCES

NUMARC NESP-007, SS3
OP-AR.ZZ-0002(Q)
SGS 1(2) Technical Specifications, 3/4.8
CBD DE-CB.125-0018(Q)
SC.MD-ST.125-0004(Q)

8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty

ALERT - 8.1.2

IC Inability to Maintain the Plant in Cold Shutdown

EAL

An **Unplanned, Complete loss** of ALL **systems providing for Decay Heat Removal**
AND
EITHER of the following occur:

- RCS Temperature has increased to > **200°F**
  (Excluding a **momentary** increase **>200°F** with **heat removal function** restored)
- An UNCONTROLLED temperature increase is RAPIDLY approaching **200°F**
  (with NO **heat removal functions** restored)

MODE -5, 6

BASIS

The intent of this EAL is to declare an Alert prior to boiling in the core when **ALL** RHR capability is lost in Cold Shutdown or Refueling. The specification of a temperature INCREASE, rather than specific equipment failures, recognizes the potential for long heatup times providing adequate time for restoration of some form of alternate cooling. The term "ALL **systems providing Decay Heat Removal functions**" is intended to represent **a complete loss** of functions providing core cooling during the Cold Shutdown and Refueling Modes including available injection pathways. The term **"Unplanned"** is included to preclude the declaration of an emergency for circumstances in which the RHR System is intentionally removed from service. This EAL allows actions taken in the appropriate OP-AB.RHR procedures to re-establish RHR Cooling or provide for alternate methods of decay heat removal, such as Hot Leg Injection, with the intent of maintaining RCS temperature below 200°F. For loss of "in-service" RHR events with alternate cooling methods available, actions taken to provide for alternate decay heat removal functions may require time to implement. If the event results in RCS temperature **momentarily** (not to exceed 15 minutes) rising above 200°F with heat removal capability restored, Emergency Coordinator judgement will be required to determine whether heat removal systems are adequate to prevent boiling in the core and restoration of RCS temperature control. **Momentary (not to exceed 15 minutes) unplanned excursions above 200°F, when alternate decay heat removal capabilities exist, should not be classified under this EAL.**

NRC analysis has shown that specific sequences can result in core uncovery within 15 to 20 minutes and severe core damage within an hour after decay heat removal capability has been lost.

Barrier Analysis

None

ESCALATION CRITERIA

This event would be escalated to a Site Area Emergency if RCS temperatures cannot be restored to below 350°F, or if the core becomes uncovered.

DISCUSSION

Separate criteria was included in this EAL for the 200°F limit in order to recognize additional methods available to provide core cooling. A loss of Technical Specification components alone is not intended to be classified under this EAL. The same is true for momentary unplanned excursions above 200°F when an alternate cooling method is available and functioning to lower RCS temperature below 200°F, thus representing successful implementation of the loss of RHR Abnormal Operating Procedure network. The EAL guidance related to uncontrolled temperature rise is necessary to preserve the anticipatory philosophy of NUREG-0654 for events starting from much lower than the Cold Shutdown temperature limit. With Core Exit Thermocouple indications available, this classification can be easily made in a timely manner. Wide range Thot or RHR System temperature indications are not considered accurate as they are dependant on RHR System flow. Reference to the Abnormal Procedures may be required for determining heatup rate when the CETs are disconnected for refueling operations or otherwise unavailable. Use of these curves provides sufficient detail to determine core heat up rate. This EAL satisfies the concerns of Generic Letter 88-17.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SA3
NUMARC Questions and Answers, June 1993, "System Malfunction Question #6b"
OP-AB.RHR-0001(Q)
OP-AB.RHR-0002(Q)
Generic Letter 88-17

8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty

SITE AREA EMERGENCY - 8.1.3.a

IC Complete Loss of Functions Needed to Achieve or Maintain the Plant in Hot Shutdown

EAL

An **Unplanned, Complete loss** of ALL **systems providing for Decay Heat Removal**
AND
EITHER of the following occur:

- RCS Temperature has increased to > **200°F**
  (Excluding a **momentary** increase **>200°F** with **heat removal function** restored)
- An UNCONTROLLED temperature increase is RAPIDLY approaching **200°F**
  (with NO **heat removal functions** restored)

AND
Actions required by OP-AB.RHR have NOT maintained RCS temperatures **< 350°F**

MODE - 4 on RHR Cooling, 5, 6

BASIS

This EAL is a direct result of a loss of RHR event and takes advantage of the various RCS cooling options offered by the Abnormal Operating procedures for a loss of RHR capabilities. Should this loss of RHR cooling event result in an RCS heatup to >350°F, this EAL will allow classification based upon a significant loss of plant control and work in conjunction with the Fission Product Barrier Table or Radiological Releases/Occurrences EALs.

Barrier Analysis

None

ESCALATION CRITERIA

This event would be escalated to a General Emergency on loss of Fission Product Barriers or abnormal radiological releases.

DISCUSSION

This EAL works in conjunction with EALs 8.1.2 and 8.1.3.d, depending upon the initial plant conditions. When in Modes 5 or 6 and RHR capability is lost (EAL 8.1.2), OP-AB.RHR-0001 and -0002 provide guidance on controlling the RCS temperature rise by various methods including injection or steaming of the Secondary plant. When a cooldown from Mode 3 into Mode 4 is required, EAL 8.1.3.d provides threshold values for a loss of Heat Sink event until RHR cooling can be established.

DEVIATION

None

REFERENCES

NUMARC NESP, SS4
EOP-CFST-1
OP-AB.RHR-0001(Q)
OP-AB.RHR-0002(Q)

8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty

SITE AREA EMERGENCY - 8.1.3.b

IC Loss of Reactor Vessel Level that has or will Uncover Fuel in the Reactor Vessel

EAL

RVLIS Full Range < **50%**

MODE - 5, 6

BASIS

This EAL is an extension of the Loss of Decay Heat Remaoval Capabilities EAL Alert classification as well as guidance for Modes 5 & 6 LOCA conditions. This EAL addresses loss of inventory events such that the active fuel will be uncovered. The threshold value of RVLIS Full Range < 50% is chosen from the EOP-CFST-1 Core Cooling Status Tree.

Barrier Analysis

None

ESCALATION CRITERIA

This event would be escalated to a General Emergency on loss of Fission Product Barriers or abnormal radiological releases.

DISCUSSION

This EAL addresses the effects of prolonged core boiling following a loss of decay heat removal or Mode 5/6 LOCA conditions. Symptom based criteria from the EOP Critical Safety Function Tree monitoring are integrated into this EAL. The CFSTs are contained as a tab to the ECG. Use of RVLIS to indicate reactor vessel water level is more specific than the CFST Core Cooling status codes. Full Range RVLIS indicates reactor vessel water level with no RCPs running. The intent of this EAL is to provide a RVLIS level which approximates core uncovery. The actual RVLIS level

which indicates "top of active fuel" is somewhat higher than 50%; however, 50% was adopted to be consistent with the CFST value.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SS5

8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty

SITE AREA EMERGENCY - 8.1.3.c

IC Complete Loss of Functions Needed to Achieve or Maintain the Plant in Hot Shutdown

EAL

Heat Sink RED PATH

MODE - 1, 2, 3, & 4/RHR in Injection Lineup

BASIS

This EAL addresses complete loss of a function required to reach Hot Shutdown conditions while operating in Mode 1, 2, 3, or Mode 4 with both trains of RHR aligned for injection. The ability to place the plant in Mode 3 from any "at Power" condition represents the loss of Reactivity Control which is adequately addressed in Section 5.0, ATWS. CFST Heat Sink RED PATH will limit the ability of the Control Room crew to place the plant in a Hot Shutdown condition due the inability to remove heat from the RCS. This represents an actual loss of functions intended for protection of the public and is consistent with the Fission Product Barrier Table threshold values; thus declaration of a Site Area Emergency is warranted. This EAL works in conjunction with EAL 8.1.3.b for events which occur while the plant is in on RHR cooling.

Barrier Analysis

N/A

ESCALATION CRITERIA

Escalation to a General Emergency would be based on loss of Fission Product Barriers or Radiological Releases.

DISCUSSION

Symptom based criteria from the Emergency Operating Procedures Critical Safety Function Tree (CFST) Monitoring program. The CFSTs are contained as a tab to the ECG. The intent of using CFST status is to simplify the identification of the threshold criteria.

DEVIATION

None

REFERENCES

NUMARC NESP, SS4
EOP-CFST-1

8.0 System Malfunctions

8.1 Loss of Heat Removal Capabililty

SITE AREA EMERGENCY - 8.1.3.d

IC Complete Loss of Functions Needed to Achieve or Maintain the Plant in Hot Shutdown

EAL

All Turbine Stop Valve Closed AND LOSS of **All** Steam Dump Valves AND LOSS of **All** MS10 Valve Control (in Auto AND Manual) AND **>15 minutes** have elapsed

MODE - 1, 2, 3, and 4with RHR in Injection Mode

BASIS

This EAL addresses complete loss of a function required to reach Hot Shutdown conditions while operating in Mode 1, 2, 3, or Mode 4 with both trains of RHR aligned for injection. The inability to place the plant in Mode 3 from any "at Power" condition represents the loss of Reactivity Control which is adequately addressed in Section 5.0, ATWS. A total loss of Steam Generator heat removal capability will limit the ability of the Control Room crew to place the plant in a Hot Shutdown condition due the inability to remove heat from the RCS. The 15 minute threshold value was added to allow for restoration of unavailable systems. This represents an actual loss of functions intended for protection of the public; thus declaration of a Site Area Emergency is warranted. This EAL works in conjunction with EAL 8.1.3.a for events which occur while the plant is in on RHR cooling.

Barrier Analysis

N/A

ESCALATION CRITERIA

Escalation to a General Emergency would be based on loss of Fission Product Barriers or Radiological Releases.

DISCUSSION

This EAL attempts to identify a condition where all secondary heat removal capabilities have been lost due to inability of the Steam Generators to transfer heat either to the atmosphere or the Main Condenser. This loss of heat removal capabilities will result in an inability to cooldown the RCS to a Hot Shutdown condition.

DEVIATION

None

REFERENCES

NUMARC NESP, SS4

8.0 System Malfunctions

8.2 Loss of Assessment Capabililty

UNUSUAL EVENT - 8.2.1.a

IC Unplanned Loss of All Onsite or Offsite Communications Capabilities

EAL

Unplanned Loss of ALL ONSITE communications as evidenced by the loss of ALL of the folllowing systems:

- Station Page System (Gaitronics)
- Station Radio System
- Direct Inward Dial System (DID)
- Essex (Centrex) Phone System
- Nuclear Emergency Telephone System (NETS)

MODE - All

BASIS

An **Unplanned** loss of communication ability significantly degrades the operating crews ability to perform tasks necessary for plant operations and/or the ability to communicate with offsite authorities, warrants declararation of an Unusual Event. The loss of off-site communications capability is more comprehensive than that addressed by 10CFR50.72.b. **Unplanned** is defined as the loss of communication capabilities not being the result of planned maintenance activities, where compensatory measures would be taken.

Barrier Analysis

N/A

ESCALATION CRITERIA

None

DISCUSSION

None

DEVIATION

None

REFERENCES

NUMARC NESP-0007, SU6

8.0 System Malfunctions

8.2 Loss of Assessment Capabililty

UNUSUAL EVENT - 8.2.1.b

IC Unplanned Loss of All Onsite or Offsite Communications Capabilities

EAL

Unplanned Loss of ALL offsite communications as evidenced by the loss of ALL of the following systems:

- Direct Inward Dial System (DID)
- Nuclear Emergency Telephone System (NETS)
- Essex (Centrex) Phone System
- NAWAS
- EMRAD
- FTS 2000

MODE - All

BASIS

An **Unplanned** loss of communication ability significantly degrades the operating crews ability to perform tasks necessary for plant operations and/or the ability to communicate with offsite authorities, warrants declararation of an Unusual Event. The loss of off-site communications capability is more comprehensive than that addressed by 10CFR50.72.b. **Unplanned** is defined as the loss of communication capabilities not being the result of planned maintenance activities, where compensatory measures would be taken.

Barrier Analysis

N/A

ESCALATION CRITERIA

None

DISCUSSION

None

DEVIATION

None

REFERENCES

NUMARC NESP-0007, SU6

8.0 System Malfunctions

8.2 Loss of Assessment Capabililty

UNUSUAL EVENT - 8.2.1.c

IC Unplanned loss of Most or All Annunciation or Indication in the Control Room for Greater Than 15 minutes

EAL

Unplanned loss of ≥ **75%** of Control Room Overhead Annunciators for ≥ **15 minutes**

MODE - 1, 2, 3, 4

BASIS

A unplanned loss of most or all Control Room Overhead annunciators without a plant transient in MODES 1, 2, 3, or 4 for greater than 15 minutes warrants a heightened awareness by Control Room Operators. Qualification of "most" is left to the discretion of the Senior Nuclear Shift Supervisor (SNSS), and is considered approximately 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. OP-AB.ANN-0001(Q) details increased monitoring and surveillance requirements as well as alternate indicators. 15 minutes is used as a threshold to exclude transient or momentary power losses. The 15 minutes clock starts when the annunciators have been lost, or are determined to have been lost. If upon time of discovery it is determined that the annunciators have been lost for at least 15 minutes prior to discovery, classification must be made under this EAL regardless of time required for restoration. If it is determined that the annunciators were lost for at least 15 minutes with the annunciators available at the time of discovery, classification is not required under this EAL but a review of the "After The Fact" RAL must be completed. **Unplanned** loss of annunciators excludes scheduled maintenance and testing activities.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to an Alert if a transient is in progress or if alternate indications become unavailable.

DISCUSSION

This EAL is not required in modes 5 or 6 due to the limited number of safety systems required for operation.

In judging the severity of the annunciator loss, consideration should be given to those annunciators needed for by the operating staff for operation in abnormal and emergency operating procedures.

DEVIATION

Example 1.c is not required in this EAL as the referenced procedure describes the monitoring, surveillance, and judgement that must be made.

REFERENCES

NUMARC NESP-007, SU3
OP-AB.ANN-0001(Q)

8.0 System Malfunctions

8.2 Loss of Assessment Capabililty

ALERT - 8.2.2.a/8.2.2.b

IC Unplanned loss of Most or All Control Room Annunciatiors and a significant Transient is in Progress or Compensatory Indicators are Unavailable

EAL

Unplanned loss of ≥**75%** of Control Room Overhead Annunciators for ≥ **15 minutes**
AND
EITHER one of the following:
- Alternate Indications are NOT AVAILABLE per AB.ANN-0001(Q)
- A **significant transient** is in Progress

MODE - 1, 2, 3, 4

BASIS

A unplanned loss of most or all Control Room Overhead annunciators without a plant transient in MODES 1, 2, 3, or 4 for greater than 15 minutes warrants a heightened awareness by Control Room Operators. Qualification of "most" is left to the discretion of the Senior Nuclear Shift Supervisor (SNSS), and is considered approximately 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. OP-AB.ANN-0001(Q) details increased monitoring and surveillance requirements as well as alternate indicators. 15 minutes is used as a threshold to exclude transient or momentary power losses. The 15 minutes clock starts when the annunciators have been lost, or are determined to have been lost. If upon time of discovery it is determined that the annunciators have been lost for at least 15 minutes prior to discovery, classification must be made under this EAL regardless of time required for restoration. If it is determined that the annunciators were lost for at least 15 minutes with the annunciators available at the time of discovery, classification is not required under this EAL but a review of the "After The Fact" RAL must be completed. **Unplanned** loss of annunciators excludes scheduled maintenance and testing activities.

A significant transient is left to the determination of the SNSS/EC; but, as a minimum, plant transients for this EAL should include:

- Reactor Trips (Manual and Automatic)
- Load Rejections > 25% Thermal Power
- ECCS Actuations

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency with a failure of alternate indications and a plant transient in progress.

DISCUSSION

Without Control Room annunciators, it may be difficult to monitor conditions associated with normal plant operations. During transient event such as those listed in the EAL, the difficulty becomes more acute.

This EAL is not required in modes 5 or 6 due to the limited number of safety systems required for operation.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SA4
OP-AB.ANN-0001(Q)

8.0 System Malfunctions

8.2 Loss of Assessment Capabililty

SITE AREA EMERGENCY - 8.2.3

IC Inability to Monitor a Significant Transient in Progress

EAL

Unplanned loss of ≥75% of Control Room Overhead Annunciators for ≥ **15 minutes**
AND
A Significant Transient is in Progress
AND
Control Room indications are unavailable to monitor ANY one of the following:
- RCS Status
- Reactivity Control
- ECCS
- Secondary Systems (SGs, AFW)
- Containment Parameters

AND
Alternate Indications are NOT AVAILABLE per AB.ANN-0001(Q)

MODE - 1, 2, 3, 4

BASIS

An unplanned loss of most or all Control Room Overhead annunciators without a plant transient in MODES 1, 2, 3, or 4 for greater than 15 minutes warrants a heightened awareness by Control Room Operators. Qualification of "most" is left to the discretion of the Senior Nuclear Shift Supervisor (SNSS), and is considered approximately 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.

15 minutes is used as a threshold to exclude transient or momentary power losses. The 15 minutes clock starts when the annunciators have been lost, or are determined to have been lost. If upon time of discovery it is determined that the annunciators have been lost for at least 15 minutes prior to discovery, classification must be made under this EAL regardless of time required for restoration. If it is determined that the annunciators were lost for at least 15 minutes

with the annunciators available at the time of discovery, classification is not required under this EAL but a review of the "After The Fact" RAL must be completed.

Unplanned loss of annunciators excludes scheduled maintenance and testing activities.
A significant plant transient is left to the determination of the SSNS/EC; but, as a minimum, plant transients for this EAL should include:

- Reactor Trips (Manual and Automatic)
- Load Rejections > 25% Thermal Power
- ECCS Actuations

The list of systems requiring Control Room monitoring ability (e.g.; RCS, Reactivity Control, ECCS, etc.) was included to ensure all safety functions (including the ability to shut down the reactor, maintain core cooling, maintain the RCS intact, provide for a heat sink, and maintain an intact Containment) can be determined by some form of Control Room instrumentation. OP-AB.ANN-0001(Q) details increased monitoring and surveillance requirements as well as alternate indicators.

Barrier Analysis

None

ESCALATION CRITERIA

This event would be escalated to a General Emergency based on the loss of Fission Product Barriers or abnormal radiological releases.

DISCUSSION

Without Control Room annunciators, it may be difficult to monitor conditions associated with normal plant operations. During transient event such as those listed in the EAL, the difficulty becomes more acute. Compounding these, a concurrent loss of control room backup monitoring will further hinder operations staff decision making needed to respond to the transient.

DEVIATION

None

REFERENCES

NUMARC NESP-007, SS6
OP-AB.ANN-0001(Q)

8.0 System Malfunctions

8.3 Loss of Control Room Habitability

ALERT - 8.3.2

IC Control Room Evacuation has been Initiated

EAL

Control Room Evacuation has been initiated

MODE - All

BASIS

Control Room evacuation represents a serious plant situation since the degree of plant control at the remote shutdown locations is not as complete as it would be without evacuation. The intent of this EAL is to declare an Alert when the determination to evacuate the Control Room has been made based on environmental/personnel safety concerns, and physical process of evacuating the Control Room has commenced.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency if control cannot be established within 15 minutes.

DISCUSSION

Control Room evacuation requires establishment of plant control from outside the Control Room (local control and Hot Shutdown Panels) and support from the Technical Support Center (TSC) and/or the Emergency Operations Facility (EOF) as necessary.

The establishment of remote system control will bypass many protective trips and interlocks. In addition, much of the instrumentation and assessment tools available in the Control Room will

not be available. Operator actions upon deciding that the control room should be evacuated include tripping the reactor and main turbine, starting auxiliary feed water pumps, initiating a Main Steam Line Isolation and placing all Lockout Switches on RP4 in the Valve Operable Position.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA5
OP-AB.CR-0001 (Q)
OP-AB.CR-0002 (Q)

8.0 System Malfunctions

8.3 Loss of Control Room Habitability

SITE AREA EMERGENCY - 8.3.3

IC Control Room Evacuation has been Initiated and Plant Control Cannot Be Established

EAL

Control Room Evacuation has been initiated **AND** **Control of the plant** CANNOT be established from outside the control room within **15 minutes**

MODE - All

BASIS

Transfer of safety system control has not been performed in an expeditious manner and it is unknown if any damage has occurred to the fission product barriers. During this transitional period the function of monitoring and/or controlling parameters necessary for plant safety may not be occurring and as a result there may be a threat to plant safety. The **15 minute** time limit for transfer of control is based on a reasonable time period for personnel to leave the control room, arrive at the hot shutdown areas, and reestablish plant control to preclude core uncovery and/or core damage. The term **"control of the plant"** will require SNSS judgement in deciding whether sufficient control has been established to maintain core cooling based upon initial reports of equipment status from Hot Shutdown Panel 213.

Barrier Analysis

None

ESCALATION CRITERIA

This event will escalate based upon loss of Fission Product Barriers or abnormal radiological releases.

DISCUSSION

This EAL is designed to address the conditions where due to environmental/personnel safety concerns control room evacuation is required. Additionally, control cannot be established from outside the control room within 15 minutes.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HS2
OP-AB.CR-0001 (Q)
OP-AB.CR-0002 (Q)

8.0 System Malfunctions

8.4 Technical Specifications

UNUSUAL EVENT - 8.4.1

IC Inability to Reach Required Mode Within Technical Specification Limits

EAL

Plant is NOT brought to the required Mode within the Technical Specification required time limit

MODE - 1, 2, 3, 4

BASIS

Entry into this EAL should occur when it is discovered that a Technical Specification Limiting Condition for Operation (LCO) action statement requiring a plant Mode change has not been complied with. Limiting Conditions for Operation (LCOs) require the plant to be brought to a safe Mode when the Technical Specification required plant system or component configuration cannot be maintained/restored. This Unusual Event is entered when the plant fails to COMPLY WITH THE ACTION STATED in a LCO, not when the action is required.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated based upon system malfunctions or other conditions covered in various other EAL sections.

DISCUSSION

Depending on the circumstances, this may or may not be a precursor to a more severe condition. A shutdown required by the site Technical Specifications requires a report under 10 CFR 50.72 (b) Non-emergency events. The plant is within its safety envelope when actions are completed within the allowable action statement time in the Technical Specifications. If the times specified

within the action statements are not met, the plant may be in an unsafe condition. The declaration is based on exceeding the LCO action time period and is not related to how long a plant condition may have existed.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, SU2
SGS Technical Specifications
10CFR50.72

9.0 Hazards - Internal/External

9.1 Security Threats

UNUSUAL EVENT - 9.1.1

IC Confirmed Security Event Which Indicates a Potential Degradation in the Level of Safety of the Plant

EAL

Confirmed security threat directed towards the station as evidenced by ANY one of the following:

- Credible threat of malicious acts or destructive device within the Protected Area resulting in **SCP-5** implementation
- Credible intrusion or assault threat to the Protected Area resulting in **SCP-5** implementation
- Attempted intrusion or assault to the Protected Area resulting in **SCP-7** OR **SCP-11** implementation
- Attempted malicious acts attempted or discovered within the Protected Area resulting in **SCP-10** implementation
- Hostage/Extortion situation that threatens normal plant operations resulting in **SCP-8** implementation
- Destructive Device discovered within the Protected Area resulting in **SCP-10** implementation

MODE - All

BASIS

A security threat that is identified as being directed towards the station represents a potential degradation in the level of safety of the plant. The intent of this EAL is to classify security events which threaten the Protected Area, but have not been determined to threaten plant vital areas. A security threat is satisfied if physical evidence supporting the threat exists, if information independent from the actual threat exists, or if a specific group claims responsibility for the threat. The SNSS/EC will declare an Unusual Event upon consulting with Security to determine the validity of the entry conditions. Security Contingency Procedure (SCP) numbers are referenced following each EAL threshold. Since some SCP numbers appear in more than one EAL, the on-duty PSE&G

Security Supervisor will provide information concerning the specific event to aid in classification.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert based upon an actual Protected Area intrusion, malicious acts, or destructive devices discovered within a Vital Area.

DISCUSSION

Security events which do not represent a potential degradation in the level of safety of the plant are reported under RAL 11.7.1.a an a One Hour Non-Emergency Safeguards event.
The following is an index of Security Contingency Procedures referenced by this event:

SCP-5 "Security Threat"
SCP-7 "Internal Disturbance"
SCP-8 "Hostage Situation"
SCP-10 "Discovery of Destructive Devices or Evidence of Malicious Acts"
SCP-11 "Civil Disturbance"

DEVIATION

None

REFERENCES

NUMARC NESP-007, HU4.1, HU4.2
Safeguards Contingency Plan

9.0 Hazards - Internal/External

9.1 Security Threats

ALERT - 9.1.2

IC Security Event in a Plant Protected Area

EAL

Confirmed hostile intrusion or malicious acts as evidenced by ANY one of the following:

- Discovery of an intruder(s), armed and violent, within the Protected Area resulting in **SCP-6** implementation
- Hostage held on-site in a non-vital area resulting in **SCP-8** implementation
- Malicious acts or destructive device discovered in a Vital Area resulting in **SCP-10** implementation

MODE - All

BASIS

This class of security event represents an escalated threat to the level of safety of the plant. This event is satisfied if physical evidence supporting the hostile intrusion or assault exists. The intent of this EAL is to classify security events which represent an actual intrusion into the plant Protected Area. The SNSS/EC will declare an Alert upon consulting with the Security to determine the validity of the entry conditions. Security Contingency Procedure (SCP) numbers are referenced following each EAL threshold. Since some SCP numbers appear in more than one EAL, the on-duty PSE&G Security Supervisor will provide information concerning the specific event to aid in classification.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a Site Area Emergency based upon a hostile intrusion in plant Vital Areas.

DISCUSSION

The following is an index of Security Contingency Procedures referenced by this event:

SCP-6 "Discovery of Intruders or Attack"
SCP-8 "Hostage Situation"
SCP-10 "Discovery of Destructive Devices or Evidence of Malicious Acts"

DEVIATION

None

REFERENCES

NUMARC NESP-007, HA4.1, HA4.2
Safeguards Contingency Plan

9.0 Hazards - Internal/External

9.1 Security Threats

SITE AREA EMERGENCY - 9.1.3

IC Security Event in a Plant Vital Area

EAL

Confirmed hostile intrusion or malicious acts in plant Vital Areas as evidenced by: • Discovery of an intruder(s), armed and violent, within the Vital Area resulting in **SCP-6** implementation

MODE - All

BASIS

This class of security event represents an escalated threat to plant safety above that contained in an Alert in that a hostile intrusion or assault has progressed from the Protected Area to a Vital Area. The Vital Areas are within the Protected Area and are generally controlled by key card readers. These areas contain vital equipment which includes any equipment, system, device or material required for safe shutdown and for protection of the health and safety of the public and plant personnel. The Security Contingency Procedure (SCP) number is referenced following the EAL threshold. Since some SCP numbers appear in more than one EAL, the on-duty PSE&G Security Supervisor will provide information concerning the specific event to aid in classification.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to a General Emergency based upon the loss of physical control of the Control Room or Remote Shutdown Capability.

DISCUSSION

The following is an index of the Security Contingency Procedure referenced by this event:

SCP-6 "Discovery of Intruders or Attack"

DEVIATION

None

REFERENCES

NUMARC NESP-007, HS1.1, HS1.2
Safeguards Contingency Plan

9.0 Hazards - Internal/External

9.1 Security Threats

GENERAL EMERGENCY - 9.1.4

IC Security Event Resulting in Loss of Ability to Reach and Maintain Cold Shutdown

EAL

Security event resulting in the **actual loss of physical control** of EITHER one of the following: • Control Room • Remote Shutdown Panel 213

MODE - All

BASIS

Security events classified under this EAL represent conditions under which a hostile force has ken physical control of areas required to reach and maintain cold shutdown. Both the Control Room and Remote Shutdown Panel are included, since control of either could hamper the operating crew's ability to perform a safe plant shutdown. **Actual loss of physical control** is defined as the condition where licensed Control Room operators can no longer take required action to operate the plant, including unauthorized transfer of plant equipment controlled from the Control Room.

Barrier Analysis

None

ESCALATION CRITERIA

N/A

DISCUSSION

The Remote Shutdown Panel 213 was the only panel included in this EAL due to its central location and ability to allow for **physical control** of multiple Safety Related components without detailed knowledge of plant operations. Security threats which meet the threshold for declaration of a General Emergency are an actual loss of physical control of the Control Room or remote shutdown

locations. This situation places the plant in a potentially unstable condition with high potential of multiple barrier failures.

DEVIATION

None

REFERENCES

NUMARC NESP-007, HG1
Safeguards Contingency Plan

9.0 Hazards - Internal/External

9.2 Fire

UNUSUAL EVENT - 9.2.1

IC Fire Within the Protected Area Boundary Not Extinguished Within 15 Minutes of Detection

EAL

Valid Fire Alarm is received in the Main Control Room **OR**
Report of a **fire** from personnel at the scene
AND
Fire is within ANY one of the following Plant Structures (EXCLUDING small **fires** that have NO potential to affect **Safety Systems** or Protected Area Permanent Plant Structures)

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area
- Turbine Building

AND
Fire is NOT extinguished within **15 minutes** of EITHER one of the following:

- Receipt of a **Valid Fire** Alarm
- Report of a fire from the scene

MODE - All

BASIS

Fires classified under this EAL include those of a magnitude and extent that may be a potential precursor to damage to **Safety Systems**, and hence has safety significance. This EAL includes plant vital structures and also structures and areas that are contiguous to plant vital structures, due to the potential for a fire to spread from a non-safety related structure to an adjoining safety related structure. A fire alarm received in the Control Room is considered to be **Valid** when the alarm is substantiated by the receipt of related independent alarms (fire, temperature, deluge, etc) in the

Control Room or by visual confirmation if only a single detector is alarming. This EAL EXCLUDES such items as fires in Structures other then those listed in the EAL, waste-basket fires, and other small fires of no safety significance based on the judgement of the SNSS that NO potential to affect a **Safety System** exists. Emergency Coordinator judgement must be exercised to determine if a fire within a plant structure is of any safety significance. The 15 minute clock starts upon receipt of a **Valid** Fire Alarm or report of a fire from personnel at the scene. 15 minutes was determined to be a reasonable time limit for small fires to be extinguished. A **Safety System** is defined as any system or component included within the Technical Specification.

Fire is defined as combustion characterized by the generation heat and smoke. Sources of smoke such as overheated electrical equipment and slipping drive belts, for example, do not constitute fires. Observation of a flame is preferred but is NOT required if large quantities of smoke and heat are observed.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to an Alert if the fire damages more than one plant safety system or damages any plant vital structures.

DISCUSSION

The presence of a fire within the specified areas must be evaluated to determine the potential impact on **Safety Systems**, even if initial reports are that the fire is effecting a non-safety related portion of the plant, but has the potential to spread.

Excluded or non-vital structures include:
Unit 3
Main or Aux Guard House
Circulating Water Structure
Main, Aux, and Switchyard Transformers
B-building
Onsite Trailers
Salem Admin Building
Onsite Warehouses
Nuclear Services Building

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU2
M10-FRS-I-0001, Control Room Fire Response
NUMARC Q & A, JUNE 1993

9.0 Hazards - Internal/External

9.2 Fire

ALERT - 9.2.2

IC Fire Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown

EAL

Fire within ANY one of the following Plant Vital Structures:
- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

The Fire is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:
- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE Safety System
- Any Plant Vital Structure which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

MODE - All

BASIS

The primary concern in this EAL is the magnitude of the fire and the effects on **safety systems** required for the present MODE of operation. Specific system degradation is addressed in the System Malfunction EALs. A detailed assessment of system **damage** is not required prior to classification. The term "**Damage**" is defined as evidence that the fire has caused component

malfunction (pump trip, breaker trip, etc.) or a report of visible scorching, blistering or other deformation that may have resulted in the equipment/structure being INOPERABLE or otherwise incapable of performing it's design function. A **Safety System** is defined as any system or component included in Technical Specifications. In those cases where it is believed that the fire may have caused damage to **Safety Systems**, then an Alert declaration is warranted, since the full extent of the damage may not be known. For Plant Vital Structure **damage**, classification is required under this EAL if the structure houses or otherwise supports **safety systems** required for the present MODE of operation.

For example, a fire that has been confirmed to be localized to a single piece of equipment, like a 4.16 KV Breaker, with no potential to spread to adjacent equipment, does not warrant classification as an Alert. In the event, however, that the fire has spread or is believed to be spreading to other 4.16 KV Breakers for component(s) required for the present MODE of operations, then an Alert is warranted.

Fire is defined as combustion characterized by the generation heat and smoke. Sources of smoke such as overheated electrical equipment and slipping drive belts, for example, do not constitute fires. Observation of a flame is preferred but is NOT required if large quantities of smoke and heat are observed.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated based on further damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases.

DISCUSSION

No lengthy and timely assessment of damage is required prior to classification. In this EAL, no attempt is made to quantify the magnitude of the damage to any safety system but instead an attempt is made to identify any damage in order to quantify the magnitude and extent of the fire. In short, if the fire is big enough that it has damaged more than one safety system, or more than one train of a safety system, then the fire is big enough to justify an Alert declaration. Damage to Plant Vital Structures must be to the extent that EC judgement must be used to determine if the structure is still capable of performing its design function. Electrical failures (such as shorts, grounds, arcing, etc.) should be evaluated for the possibility of a fire. Any security aspects of this event should be considered under EAL sections covering Security Events.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA2
M10-FRS-I-001, Control Room Fire Response

9.0 Hazards - Internal/External

9.3 Explosion

UNUSUAL EVENT - 9.3.1

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

Confirmed Explosion within the Protected Area **AND** Report of visible damage to Plant equipment or Protected Area Permanent Plant Structures

MODE - All

BASIS

Occurrence of this event within the Protected Area, that causes visible damage to plant equipment or Protected Area Permanent Plant Structures warrant declaration as an Unusual Event under this EAL. Confirmed Explosions outside the Protected Area should not be classified under this EAL. No attempt should be made to assess the magnitude of the damage. The confirmed occurrence of the explosion with a report of damage (deformation/scorching) is sufficient for declaration. A **confirmed explosion** is defined as visual evidence that a rapid, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to damage permanent plant structures, systems or components, has occurred.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to Alert if the explosion damages more than one safety system or damages any plant vital structure as per EAL 9.3.2.

DISCUSSION

Electrical failures (such as shorts, grounds, arcing, etc.) should not be considered an explosion; however, they should be evaluated for the possibility of a fire. Any security aspects of this event should be considered under EAL sections covering Security Events.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU1.5
M10-FRS-I-0001, Control Room Fire Response

9.0 Hazards - Internal/External

9.3 Explosion

ALERT - 9.3.2

IC Explosion Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown

EAL

Confirmed explosion within ANY one of the following Plant Vital Structures:

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

The Explosion is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:

- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE **Safety System**
- Any Plant Vital Structure which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

MODE - All

BASIS

The primary concern in this EAL is the magnitude of the explosion and the effects on **safety systems** required for the present MODE of operation. Specific system degradation is addressed in the System Malfunction EALs. A detailed assessment of system **damage** is not required prior to classification. The term "**Damage**" is defined as evidence that the explosion has caused component

malfunction (pump trip, breaker trip, etc.) that may have resulted in the equipment/structure being INOPERABLE or otherwise incapable of performing it's design function. A **Safety System** is defined as any system or component included in Technical Specifications. In those cases where it is believed that the explosion may have caused damage to **Safety Systems**, then an Alert declaration is warranted, since the full extent of the damage may not be known. For Plant Vital Structure **damage**, classification is required under this EAL if the structure houses or otherwise supports **safety systems** required for the present MODE of operation.

A **confirmed explosion** is defined as visual evidence that a rapid, unconfined combustion, or a catastrophic failure of pressurized equipment that imparts energy of sufficient force to damage or potentially damage permanent plant structures, systems or components.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated based on further damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases.

DISCUSSION

No lengthy and timely assessment of damage is required prior to classification. In this EAL, no attempt is made to quantify the magnitude of the damage to any safety system but instead an attempt is made to identify any damage in order to quantify the magnitude and extent of the explosion. In short, if the explosion is big enough that it has damaged more than one safety system, or more than one train of a safety system, then the explosion is big enough to justify an Alert declaration. Damage to Plant Vital Structures must be to the extent that EC judgement must be used to determine if the structure is still capable of performing its design function. Electrical failures (such as shorts, grounds, arcing, etc.) should not be considered an explosion; however, they should be evaluated for the possibility of a fire. Any security aspects of this event should be considered under EAL sections covering Security Events.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA2
M10-FRS-I-001, Control Room Fire Response

9.0 Hazards - Internal/External

9.4 Toxic Gases

UNUSUAL EVENT - 9.4.1.a

IC Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant

EAL

Notification by Local, County, or State Officials for the potential need to EVACUATE non-essential personnel due to an Offsite **Toxic Gas** release **AND** SNSS deems evacuation of non-essential personnel is required

MODE - All

BASIS

Notification by Local, County, or State Officials for the potential need to EVACUATE non-essential personnel due to an Offsite Toxic Gas release, along with SNSS concurrence that such action is appropriate warrants declaration of an Unusual Event, since a release that has occurred offsite, may have an impact on routine plant operations. An offsite event (such as a tanker accident or a barge accident) may place the Protected Area within the evacuation area. The evacuation is determined from the DOT Evacuation Tables for Selected Hazardous Materials in the DOT Emergency Response Guide for Hazardous Materials. A **Toxic Gas** is considered to be any substance that is dangerous to life or limb by reason of inhalation or skin contact. A **Toxic Gas** release is considered to be a threat to plant personnel if concentrations are high enough to endanger the health of those personnel.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to an Alert if the Toxic Gas enters either a Plant Vital Area or an area contiguous to a Plant Vital Area.

DISCUSSION

None

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU3.2
SC.OP-AB.CR-0003(Q)

9.0 Hazards - Internal/External

9.4 Toxic Gases

UNUSUAL EVENT - 9.4.1.b

IC Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant

EAL

Uncontrolled Toxic Gas release within the Protected Area in ANY area which does not normally require an atmospheric survey or Respiratory Protection for entry
AND
Routine Plant Operations are IMPEDED based on EITHER one of the following:

- **Access restrictions** caused by the **uncontrolled** release
- Personnel injuries have occurred as a result of the release

MODE - All

BASIS

An **uncontrolled Toxic Gas** release within the Protected Area, in high enough concentrations, will adversely affect the health and safety of plant personnel, along with the safe operation of the plant. This EAL specifically addresses those areas within the Protected Area that do not normally require an atmospheric survey or Respiratory Protection for entry, since the atmosphere in an area that does require an atmospheric survey or Respiratory Protection does not meet the intent of this EAL. Releases classified under this EAL include those that originate both onsite and offsite. A **Toxic Gas** is considered to be any substance that is dangerous to life or limb by reason of inhalation or skin contact. **Uncontrolled Toxic Gas** releases are considered to be those releases that can not be isolated / confined to a single compartment or area, or are not as the result of a designed plant safety feature. For example, an **uncontrolled release** of chlorine/ammonia into the Turbine Building warrants declaration of an Unusual Event. A Cardox discharge inside any area that contains this safety feature (i.e. Diesel Room) does not warrant Unusual Event declaration, unless personnel injuries have occurred as a direct result of the discharge or personnel must enter the area using respiratory equipment. A **Toxic Gas** release is considered to be IMPEDING normal plant operations if concentrations are high enough to restrict routine operator movements. **Access restrictions** includes those conditions where access is only possible with appropriate personnel protection equipment, since this equipment restricts normal vision and mobility.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to an Alert if the Flammable Gas enter either a Plant Vital Area or an area contiguous to a Plant Vital Area.

DISCUSSION

This EAL should not be construed to include confined spaces that must be ventilated prior to entry or situations involving Site Protection personnel who are using respiratory equipment during the performance of their duties unless it also affects personnel not involved with Site Protection activates. These areas include ALL Confined Spaces. In addition, those situations that require personnel to wear respiratory protection equipment as the result of airborne contamination as required by Radiation Protection personnel do not meet the intent of this EAL.

An offsite event (such as a tanker accident or a barge accident) may place the Protected Area within the evacuation area. The evacuation is determined from the DOT Evacuation Tables for Selected Hazardous Materials in the DOT Emergency Response Guide for Hazardous Materials.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU3.1
SC.OP-AB.CR-0003(Q)

9.0 Hazards - Internal/External

9.4 Toxic Gases

UNUSUAL EVENT - 9.4.1.c

IC Release of Toxic or Flammable Gases Deemed Detrimental to Safe Operation of the Plant

EAL

Uncontrolled Flammable Gas release within the Protected Area that RESULTS in Flammable Gas concentrations EXCEEDING **25% of the LEL**
AND
Routine Plant Operations are IMPEDED based on EITHER one of the following:

- **Access restrictions** caused by the **uncontrolled** release
- Personnel injuries have occurred as a result of the release

MODE - All

BASIS

An **uncontrolled Flammable Gas** release within the Protected Area, in high enough concentrations, will adversely affect the health and safety of plant personnel, along with the safe operation of the plant. This EAL specifically addresses those conditions where a Flammable Gas concentration EXCEEDING **25% of the LEL** exists anywhere within the Protected Area. Releases classified under this EAL include those that originate both onsite and offsite. A **Flammable Gas** is considered to be any substance that can result in an ignition, sustained burn or detonation. **Uncontrolled Flammable Gas** releases are considered to be those releases that can not be isolated / confined to a single compartment or area. For example, an **uncontrolled release** of hydrogen into the Turbine Building in concentration exceeding 25% of the LEL (Lower Explosive Limit) warrants declaration of an Unusual Event. In comparison, a controlled release of Hydrogen during Generator purging or Hydrogen Tank trailer purging does not warrant event declaration, as these evolutions are controlled. **Flammable Gas** release is considered to be IMPEDING normal plant operations if concentrations are high enough to restrict routine operator movements. **Access restrictions** includes those conditions where access is only possible with appropriate personnel protection equipment, since this equipment restricts normal vision and mobility.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to an Alert if the Flammable Gas enter either a Plant Vital Area or an area contiguous to a Plant Vital Area.

DISCUSSION

For Hydrogen Gas, the explosive limit is 4%. Hence, a threshold of 25% of the LEL equates to 1% Hydrogen. This EAL should not be construed to include those controlled evolutions that may discharge a Flammable Gas within the Protected Area, but present no danger to plant safety, since the evolution is planned and controlled.

An offsite event (such as a tanker accident or a barge accident) may place the Protected Area within the evacuation area. The evacuation is determined from the DOT Evacuation Tables for Selected Hazardous Materials in the DOT Emergency Response Guide for Hazardous Materials.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU3.1
SC.OP-AB.CR-0003(Q)

9.0 Hazards - Internal/External

9.4 Toxic Gases

ALERT - 9.4.2.a

IC Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown Conditions

EAL

Uncontrolled Toxic Gas release within ANY one of the following Plant Structures
- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Area
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

Toxic Gas concentrations result in ANY one of the following:
- An IDLH atmosphere
- Plant personnel report severe adverse health reactions, including burning eyes, nose, throat, or dizziness
- The Lower Toxicity Limit being EXCEEDED

AND

Plant personnel are unable to perform actions necessary to complete a Safe Shutdown of the plant without appropriate personnel protection equipment

MODE - All

BASIS

An **uncontrolled Toxic Gas** release entering any of the plant structures listed in the EAL, that threatens the ability of plant personnel to perform actions required for safe shutdown of the plant, warrants declaration of an Alert. The EAL threshold includes those conditions that present a significant challenge to plant personnel. This EAL specifically addresses only those plant structures

that either contain safe shutdown equipment or are contiguous to those areas. Release classified under this EAL include those that originate both onsite and offsite. A **Toxic Gas** is considered to be any substance that is dangerous to life or limb by reason of inhalation or skin contact. **Uncontrolled Toxic Gas** releases are considered to be those releases that can not be isolated / confined to a single compartment or area, or are not as the result of a designed plant safety feature.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalated based on further damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases.

DISCUSSION

Access is considered impeded if the Toxic Gas concentrations are life threatening, i.e. require the use of personnel protective equipment. Use of protective equipment also limits the mobility and vision. The cause or magnitude of the gas concentration is not the major concern in this EAL, but rather that access required to an area that may be impeded. An IDLH atmosphere is any atmosphere that is determined to be Immediately Dangerous to Life and Health.

This EAL should not be construed to include confined spaces that must be ventilated prior to entry or situations involving Site Protection personnel who are using respiratory equipment during the performance of their duties unless it also affects personnel not involved with Site Protection activates. In addition, those situations that require personnel to wear respiratory protection equipment as the result of airborne contamination as required by Radiation Protection personnel do not meet the intent of this EAL.

An offsite event (such as a tanker accident or a barge accident) may place the Protected Area within the evacuation area. The evacuation is determined from the DOT Evacuation Tables for Selected Hazardous Materials in the DOT Emergency Response Guide for Hazardous Materials.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA3.1
SC.OP-AB.ZZ-0003(Q)

9.0 Hazards - Internal/External

9.4 Toxic Gases

ALERT - 9.4.2.b

IC Release of Toxic or Flammable Gases Within a Facility Structure Which Jeopardizes Operation of Systems Required to Maintain Safe Operations or to Establish or Maintain Cold Shutdown Conditions

EAL

Uncontrolled Flammable Gas release within ANY one of the following Plant Structures
- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Area
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND
Flammable Gas concentrations EXCEED **50% of the LEL**
AND
Plant personnel are unable to perform actions necessary to complete a Safe Shutdown of the plant without appropriate personnel protection equipment

MODE - All

BASIS

An **uncontrolled Flammable Gas** release entering any of the plant structures listed in the EAL, that threatens the ability of plant personnel to perform actions required for safe shutdown of the plant, warrants declaration of an Alert. The EAL threshold includes those conditions that present a significant challenge to plant personnel. This EAL specifically addresses only those plant structures that either contain safe shutdown equipment or are contiguous to those areas. Release classified under this EAL include those that originate both onsite and offsite. A **Flammable Gas** is considered to be any substance that is capable of being easily ignited or burning quickly. **Uncontrolled Flammable Gas** releases are considered to be those releases that can not be isolated

/ confined to a single compartment or area, or are not as the result of a designed plant safety feature. For example, an **uncontrolled release** of hydrogen into the Auxiliary Building in concentration exceeding 50% of the LEL (Lower Explosive Limit) warrants declaration of an Alert. In comparison, a controlled release of Hydrogen during Generator purging does not warrant event declaration, as this evolution is controlled.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalated based on subsequent damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases.

DISCUSSION

For Hydrogen Gas, the explosive limit is 4%. Hence, a threshold of 50% of the LEL equates to 2% Hydrogen. This EAL should not be construed to include those controlled evolutions that may discharge a Flammable Gas within the Protected Area, but present no danger to plant safety, since the evolution is planned and controlled.

An offsite event (such as a tanker accident or a barge accident) may place the Protected Area within the evacuation area. The evacuation is determined from the DOT Evacuation Tables for Selected Hazardous Materials in the DOT Emergency Response Guide for Hazardous Materials.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA3.2
SC.OP-AB.ZZ-0003(Q)

9.0 Hazards - Internal/External

9.5 Seismic Events

UNUSUAL EVENT - 9.5.1

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

Confirmed seismic event onsite **AND** Seismic event measured ≥ **0.02g**

MODE - All

BASIS

This EAL addresses a **confirmed** earthquake. An earthquake of this magnitude is not expected to affect the capability of plant safety functions. A seismic event recording a magnitude of 0.02g is slightly above the minimum level at which the Seismic Monitoring System would monitor the event. The term "**confirmed**" is defined as positive identification that a seismic event has occurred in the vicinity of the site regardless of the magnitude. This can be determine by engineering confirmation of magnitude as read on the seismic recorder, information provided by Hope Creek station, confirmation by the National Earthquake Center, or actual seismic activity felt by site personnel. The Overhead Annunciator , "SEIS RCDR SYS ACT" may alert operators to this event and the seismic monitoring instrumentation would begin to monitor the event. This value is well below the Operating Basis Earthquake of 0.1g and is 1/10 of the Design Basis level of 0.2g.

Barrier Analysis

None

ESCALATION CRITERIA

Escalation of this event would occur if the a subsequent seismic event would occur in excess of the Operating Basis Earthquake level.

DISCUSSION

An earthquake of this magnitude is not expected to affect the capability of plant safety functions. For further information, the National Earthquake Center can be contacted at (303) 273-8500. An approximate relationship between acceleration and magnitude is as follows:

An Acceleration of:	is approx. equal to a Richter Scale Magnitude of:
0.02g	4.5
0.1g	5.5
0.2g	6.5

DEVIATION

None

REFERENCES

NUMARC NESP-007, HU1.1
UFSAR, Chapter 52, Seismic Monitoring System

9.0 Hazards - Internal/External

9.5 Seismic Events

ALERT - 9.5.2

IC Natural and Destructive Phenomena Affecting the Plant Vital Area

EAL

Confirmed seismic event onsite **AND** Seismic event measured > **0.1g**

MODE - All

BASIS

This EAL addresses a **confirmed** earthquake at or above the Operating Basis Earthquake level of 0.1g. At this level, plant safety systems are designed to remain functional and within design stress and deformation limits. Thus, an earthquake of this magnitude is not expected to affect the capability of plant safety functions required to shut down the plant and place it in a cold shutdown condition. An earthquake of this magnitude is not expected to affect the capability of plant safety functions. The term "**confirmed**" is defined as positive identification that a seismic event has occurred in the vicinity of the site regardless of the magnitude. This can be determine by engineering confirmation of magnitude as read on the seismic recorder, information provided by Hope Creek station, confirmation by the National Earthquake Center, or actual seismic activity felt by site personnel. The Overhead Annunciator, "SEIS RCDR SYS ACT" may alert operators to this event and the seismic monitoring instrumentation would begin to monitor the event.

Barrier Analysis

N/A

ESCALATION CRITERIA

Escalation of this event would occur if the seismic event caused additional damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases.

DISCUSSION

The Overhead Annunciator , "SEIS RCDR SYS ACT" may alert operators to this event and the seismic monitoring instrumentation would begin to monitor the event. If analysis of the event indicates that the threshold value has been exceeded, immediate plant shutdown is required to evaluated possible equipment damage. This threshold value is well below the Design Basis Earthquake of 0.2g that is the maximum seismic event that is expected to occur based on local geological and seismological factors. For further information, the National Earthquake Center can be contacted at (303) 273-8500. An approximate relationship between acceleration and magnitude is as follows:

An Acceleration of:	is approx. equal to a Richter Scale Magnitude of:
0.02g	4.5
0.1g	5.5
0.2g	6.5

DEVIATION

None

REFERENCES

NUMARC NESP-007, HA1.1
UFSAR, Chapter 52, Seismic Monitoring System

9.0 Hazards - Internal/External

9.6 High Winds

UNUSUAL EVENT - 9.6.1.a/9.6.1.b

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

Report of a Tornado TOUCHING DOWN within the Protected Area **OR** **Sustained** wind speeds > **70 MPH** from ANY elevation of the Met Tower

MODE - All

BASIS

This EAL addresses either a tornado reported onsite or sustained, high winds being detected onsite. A tornado touching down within the Protected Area or sustained wind speeds in excess of 70 MPH are of sufficient velocity to have the potential to cause damage to Plant Vital Structures. These conditions are indicative of unstable weather conditions and represent a potential degradation in the level of safety of the plant. "Sustained" wind speed means winds in excess of the threshold value for greater than 5 minutes.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to an Alert if the tornado or high winds cause damage to Plant Vital Structures. If it is determined that the abnormal weather condition results in a loss of shutdown cooling, then the event will be escalated based on the Loss of Decay Heat Removal Capability.

DISCUSSION

These conditions are indicative of unstable weather conditions and represent a potential degradation in the level of safety of the plant. The windspeed threshold is well below the structure design basis

of 108 mph, and is set slightly below the value used to characterize Hurricane force winds. Setting this threshold value at > 70 mph ensures site accessibility for Emergency response. It is also set 5 mph below the Hope Creek windspeed threshold to prevent an Unusual Event at both sites at the same time based on this parameter.

NOTE: The Wind Speed indication from the Met Tower instrumentation is full scale at 100 mph.

The National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions:

Wilmington	(302) 573-6142
Mount Holly	(609) 261-6604
Mount Holly	(609) 261-6602

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU1.2 and HU1.7
OP-AB.ZZ-0001(Q), Severe Weather
SGS UFSAR, Sections 2.3, 3.3

9.0 Hazards - Internal/External

9.6 High Winds

ALERT - 9.6.2

IC Natural and Destructive Phenomena Affecting the Plant Vital Area

EAL

EITHER one of the following:
- Report of a Tornado TOUCHING DOWN within the Protected Area
- **Sustained** wind speeds > **70 MPH** from ANY elevation of the Met Tower

AND
The Wind Speed is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:
- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE **Safety System**
- Rendering ANY of the following structures incapable of performing its Design Function:
  * Auxiliary Building
  * Service Water Intake Structure
  * Control Point Area
  * Inner/Outer Penetration Areas
  * Containment
  * Fuel Handling Building
  * Service Building
  * RWST, PWST, and AFWST Area

AND
Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

MODE - All

BASIS

The primary concern in this EAL is the magnitude of the high winds and the effects on **safety systems** required for the present MODE of operation. Specific system degradation is addressed in the System Malfunction EALs. A detailed assessment of system **damage** is not required prior

to classification. The term "**Damage**" is defined as evidence that the high winds have caused component malfunction (pump trip, breaker trip, etc.) that may have resulted in the equipment/structure being INOPERABLE or otherwise incapable of performing it's design function. A **Safety System** is defined as any system or component included in Technical Specifications. In those cases where it is believed that the high winds may have caused damage to **Safety Systems**, then an Alert declaration is warranted, since the full extent of the damage may not be known. For Plant Vital Structure **damage**, classification is required under this EAL if the structure houses or otherwise supports **safety systems** required for the present MODE of operation.

It is not intended that a lengthy engineering analysis be performed to determine if damage has affected structural design but EC judgement must determine whether to exclude minor exterior damage which does not affect the structural design capability. The value of 70 MPH is below the design basis wind speed of 108 MPH determined for Salem Generating Station. "**Sustained**" wind speed means winds in excess of the threshold value for greater than 5 minutes.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to higher classifications based upon damage consequences covered under various other EAL sections.

DISCUSSION

With damage to these areas confirmed, an actual degradation in the level of plant safety has occurred. The windspeed threshold is well below the structure design basis of 108 mph, and is set slightly below the value used to characterize Hurricane force winds. Setting this threshold value at > 70 mph ensures site accessibility for Emergency response. It is also set 5 mph below the Hope Creek windspeed threshold to prevent an Unusual Event at both sites at the same time based on this parameter. EC judgement must be used to discriminate between minor "cosmetic" and "design function" structural damage.
NOTE: The Wind Speed indication from the Met Tower instrumentation is full scale at 100 mph.
The National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions:

Wilmington	(302) 573-6142
Mount Holly	(609) 261-6604
Mount Holly	(609) 261-6602

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA1.2 and HA1.3
OP-AB.ZZ-0001(Q), Severe Weather
SGS UFSAR, Sections 2.3, 3.3

9.0 Hazards - Internal/External

9.7 Abnormal River Level

UNUSUAL EVENT - 9.7.1.a

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

River Level ≥ **97.0'**

MODE - All

BASIS

This EAL indicates river level conditions that can jeopardize the level of safety of the plant due to potential flooding. The high level threshold is chosen at 0.5' below the historical high river level for the site (97.5') to provide adequate early notification of impending flood levels.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert based on river water level reaching ≥98.5'.

DISCUSSION

River level greater than 97.0' is indication of impending flood conditions. Flood protection measures are required by Technical Specifications and procedure at 99.5'. At this river level precautionary actions are taken, including; filling outside tanks, and ensuring that perimeter flood doors are closed. These actions ensure that the facility flood protection features are in place prior to a River level which would necessitate their use. There is a long lead time associated with this level and the river level that would require a plant shutdown (100.5').

Note that the high level Unusual Event threshold for the Salem Generating Station is not the same as the Hope Creek value. The historical high level for both stations is the same. To prevent both

stations from declaring a UE at the same level, the Salem UE level was chosen 0.5' below the Hope Creek level. This is justified because the grade level at the Salem station is lower than that for Hope Creek (Salem = 99.5', Hope Creek = 101.5').

The National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions:

Wilmington	(302) 573-6142
Mount Holly	(609) 261-6604
Mount Holly	(609) 261-6602

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU1.7
OP-AB.CW-0001(Q)
OP-AB.ZZ-0001 (Q)
SGS UFSAR, Section 2.4.11.2, Figure 3.4-1
HCGS UFSAR, Section 2.4, Figure 2.4-3

9.0 Hazards - Internal/External

9.7 Abnormal River Level

UNUSUAL EVENT - 9.7.1.b

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

River Level ≤ **81.0'**

MODE - All

BASIS

River level less than 81' is indicative of a potential degradation in the level of plant safety based on the impact upon the service water system.. The Service Water pumps are designed to operate to a low river level of 76'. The low level threshold is based on the historical low river level, to provide adequate early notification of impending loss of the Ultimate Heat Sink. The Salem EAL threshold is set 1' ABOVE the Hope Creek Low River Level threshold (80') to prevent simultaneous event classification.

Barrier Analysis

N/A

ESCALATION CRITERIA

Emergency Classification will escalate to an Alert based on river water level reaching ≤78.4'.

DISCUSSION

The National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions:

Wilmington	(302) 573-6142
Mount Holly	(609) 261-6604
Mount Holly	(609) 261-6602

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU1.7
OP-AB.CW-0001(Q)
OP-AB.ZZ-0001 (Q)
SGS UFSAR, Section 2.4.11.2, Figure 3.4-1
HCGS UFSAR, Section 2.4, Figure 2.4-3

9.0 Hazards - Internal/External

9.7 Abnormal River Level

ALERT - 9.7.2.a

IC Natural and Destructive Phenomena Affecting the Plant Vital Area

EAL

River Level ≥ **99.0'**

MODE - All

BASIS

This EAL indicates river level conditions that can threaten the level of safety of the plant due to flooding. The High level threshold is chosen .5' below the grade of the Salem station (99.5') to ensure that site access is available when an Alert is declared.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated based on damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases in other EAL sections.

DISCUSSION

River level greater than 99' is indication of impending site flood conditions. Flood protection measures are required by Technical Specifications and procedure at 99.5'. At this river level precautionary actions are taken, including; filling outside tanks, and ensuring that perimeter flood doors are closed. These actions ensure that the facility flood protection features are in place prior to a river level which would necessitate their use. The High river level threshold is below the river level that would require a plant shutdown. Technical Specification actions required by a river Level of >100.5' includes placing the plant in at least Hot Standby within the next 6 hours and in Cold

Shutdown within the next 30 hours. This is based on the river level at which facility flood protection features provide protection to safety related equipment

Note that the high level Alert threshold for the Salem Generating Station is not the same as the Hope Creek value. This is justified because the grade level at the Salem station is lower than that for Hope Creek (Salem = 99.5', Hope Creek = 101.5').

The National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions:

Wilmington	(302) 573-6142
Mount Holly	(609) 261-6604
Mount Holly	(609) 261-6602

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA1.7
OP-AB.CW-0001(Q)
OP-AB.ZZ-0001 (Q)
SGS UFSAR, Section 2.4.11.2, Figure 3.4-1
HCGS UFSAR, Section 2.4, Figure 2.4-3

9.0 Hazards - Internal/External

9.7 Abnormal River Level

ALERT - 9.7.2.b

IC Natural and Destructive Phenomena Affecting the Plant Vital Area

EAL

River Level ≤ **78.4'**

MODE - All

BASIS

This EAL indicates river level conditions that can threaten the level of safety of the plant due to loss of Service Water Intake (Ultimate Heat Sink). The Low level threshold was chosen at the minimum calculated stillwater level for the site, which is 2.4' above the design low level for Service Water Pump operation, and is consistent with UFSAR river level requirements for the Ultimate Heat Sink.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated based on damage to plant safety systems, loss of fission product barriers, or abnormal radiological releases in other EAL sections.

DISCUSSION

River level less than 78.4' is indication of impending loss of the ultimate heat sink, the Service Water System. The Service Water pumps can operate to a low River water level of 76.0'.

Note that the low level Alert threshold for the Salem Generating Station is not the same as the Hope Creek value. The design low level for the two stations is the same. The Alert Low level threshold for the Salem station is based on the Salem UFSAR analysis of the minimum stillwater elevation in the vicinity of the Salem station (78.4').

The National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions:

Wilmington	(302) 573-6142
Mount Holly	(609) 261-6604
Mount Holly	(609) 261-6602

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA1.7
OP-AB.CW-0001(Q)
OP-AB.ZZ-0001 (Q)
SGS UFSAR, Section 2.4.11.2, Figure 3.4-1
HCGS UFSAR, Section 2.4, Figure 2.4-3

9.0 Hazards - Internal/External

9.8 Flooding

UNUSUAL EVENT - 9.8.1

IC Internal Flooding in Excess of Sump Handling Capability Affecting Safety Related Areas of the Plant

EAL

Severe Flooding of Safety System Areas HAS ENDANGERED safety related equipment per OP-AB.ZZ-0002

MODE - All

BASIS

This EAL addresses conditions where severe flooding is occurring in areas that affect safety related equipment.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to an Alert based upon the loss of vital equipment due to flooding.

DISCUSSION

Severe flooding can occur from several sources including the Circulating Water System, Service Water System, Demineralized Water, Component Cooling Water, Fire Protection and Refueling Water Storage Tank.

Flooding is detailed in these areas by visual report from staff or by confirmation of sump alarms. OP-AB.ZZ-0002(Q) directs the operators to determine the exact location and severity of flooding. Attachments this procedure delineates the affected plant areas, potential source(s) of water, affected vital equipment, flood rate and time to submerge vital equipment.

DEVIATION

None

REFERENCES

NUMARC NESP-007, HU1.7
OP-AB.ZZ-0002(Q), Flooding

9.0 Hazards - Internal/External

9.8 Flooding

ALERT - 9.8.2

IC Internal Flooding Affecting the Operability of Plant Safety Systems Required to Establish or Maintain Safe Shutdown

EAL

Visual Observation of Flooding within ANY one of the following Plant Vital Structures:
- Auxiliary Building
- Service Water Intake Structure
- Fuel Handling Building
- Service Building
- Containment

AND

The Flooding is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the following:
- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE **Safety System**
- Any of the above listed Plant Vital Structures which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

MODE - All

BASIS

The primary concern in this EAL is the magnitude of the internal flooding and the effects on **safety systems** required for the present MODE of operation. Specific system degradation is addressed in the System Malfunction EALs. A detailed assessment of system **damage** is not required prior to classification. The term "**Damage**" is defined as evidence that the internal flooding has caused component malfunction (pump trip, breaker trip, etc.) that may have resulted in the equipment/structure being INOPERABLE or otherwise incapable of performing it's design function. A **Safety System** is defined as any system or component included in Technical Specifications. In

those cases where it is believed that the internal flooding may have caused damage to **Safety Systems**, then an Alert declaration is warranted, since the full extent of the damage may not be known. For Plant Vital Structure **damage**, classification is required under this EAL if the structure houses or otherwise supports **safety systems** required for the present MODE of operation.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated based upon the consequences of the loss of vital equipment as covered in various other EAL sections.

DISCUSSION

Severe flooding can occur from several sources including the Circulating Water System, Service Water System, Demineralized Water, Component Cooling Water, Fire Protection and Refueling Water Storage Tank.

Flooding is detailed in these areas by visual report from staff or by confirmation of sump alarms. OP-AB.ZZ-0002(Q) directs the operators to determine the exact location and severity of flooding. Attachments of this procedure delineates the affected plant areas, potential source(s) of water, affected vital equipment, flood rate and time to submerge vital equipment.

DEVIATION

None

REFERENCES

NUMARC NESP-007, HA1.7
OP-AB.ZZ-0002(Q), Flooding

9.0 Hazards - Internal/External

9.9 Turbine Failure / Vehicle - Missile Impact

UNUSUAL EVENT - 9.9.1.a

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

Catastrophic damage to the Main Turbine as evidenced by EITHER one of the following:
- Main Turbine casing penetration
- Main Turbine/Generator Damage potentially releasing Lube Oil or Hydrogen Gas to the Turbine Building

MODE - 1,2,3

BASIS

Turbine failure of sufficient magnitude to cause damage to the turbine casing or generator seals increases the potential for leakage of combustible/explosive gases and of combustible liquids to the Turbine Building or damage to plant systems due to missiles. The presence of H_2 gas in sufficient quantities may present a flammable/explosive hazard. Oil may also be present which may contribute to the flammability hazard.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated to an Alert based upon damage done by missiles generated by the failure or by any subsequent fire.

DISCUSSION

Turbine rotating component failures may also result in other direct damage to plant systems and components. Damage may rupture the turbine lubricating oil system, which would release flammable liquids to the Turbine Building. Potential rupture of the condenser and condenser

tubes may cause flooding in the lower levels of the Turbine Building. This damage should be readily observable.

Escape of hydrogen gas from the generator due to a loss of seal oil pumps or turbine lube oil without a turbine rotating component failure should not be classified under this event.

DEVIATION

Modes 1,2,3 are the only MODES of operation where Main Steam pressure is high enough to allow for Main Turbine operation.

REFERENCES

NUMARC NESP-0007, HU1.6
EOP-TRIP-1

9.0 Hazards - Internal/External

9.9 Turbine Failure / Vehicle - Missile Impact

UNUSUAL EVENT - 9.9.1.b

IC Natural and Destructive Phenomena Affecting the Protected Area

EAL

Vehicle Crash / Missile Impact with or within ANY one of the following Structures:

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

MODE - All

BASIS

A **Vehicle Crash / Missile Impact** with or within a listed Plant Structure represents a potential challenge to plant safety. Events classified under this EAL include those of a magnitude and extent that may be a potential precursor to damage to **Safety Systems**, and hence has safety significance. **Vehicle Crash** includes Aircraft, Helicopters, Ships, Barges, or any other vehicle types of sufficient size to potentially damage the structure. **Missile Impact** includes flying objects from offsite, onsite rotating equipment or turbine failure causing turbine casing penetration.

Barrier Analysis

None

ESCALATION CRITERIA

This event will be escalated to Alert if the crash or missile impact causes damage to Plant Vital Structures.

DISCUSSION

Any security aspects of this event should be considered under EAL sections covering Security Events.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HU1.4
NUMARC Questions and Answers, June 1993, "Hazards Question #6"

9.0 Hazards - Internal/External

9.9 Turbine Failure / Vehicle - Missile Impact

ALERT - 9.9.2

IC Natural and Destructive Phenomena Affecting the Plant Vital Area

EAL

Vehicle Crash / Missile Impact with or within ANY one of the following plant Vital Structures:

- Auxiliary Building
- Service Water Intake Structure
- Control Point Area
- Inner/Outer Penetration Areas
- Containment
- Fuel Handling Building
- Service Building
- RWST, PWST, and AFWST Area

AND

The **Vehicle Crash / Missile Impact** is of a magnitude that it SPECIFICALLY results in **Damage** to ANY one of the Following:

- TWO OR MORE Trains of a **Safety System**
- MORE THAN ONE Safety System
- Any of the above Plant Vital Structures which renders the structure incapable of performing its Design Function

AND

Damaged Safety System(s) or Plant Vital Structure is required for the present MODE of operation

MODE - All

BASIS

The primary concern in this EAL is the magnitude of the vehicle crashes / missile impact and the effects on **safety systems** required for the present MODE of operation. Specific system degradation is addressed in the System Malfunction EALs. A detailed assessment of system **damage** is not required prior to classification. The term "**Damage**" is defined as evidence that the vehicle crashes

/ missile impact has caused component malfunction (pump trip, breaker trip, etc.) that may have resulted in the equipment/structure being INOPERABLE or otherwise incapable of performing it's design function. A **Safety System** is defined as any system or component included in Technical Specifications. In those cases where it is believed that the vehicle crashes / missile impact may have caused damage to **Safety Systems**, then an Alert declaration is warranted, since the full extent of the damage may not be known. For Plant Vital Structure **damage**, classification is required under this EAL if the structure houses or otherwise supports **safety systems** required for the present MODE of operation.

Barrier Analysis

N/A

ESCALATION CRITERIA

This event will be escalated based on further damage to plant safety systems, fission product barriers, or abnormal radiation releases in other EAL sections.

DISCUSSION

No lengthy and timely assessment of damage is required prior to classification. In this EAL, no attempt is made to quantify the magnitude of the damage to any safety system but instead an attempt is made to identify any damage in order to quantify the magnitude and extent of the vehicle crashes / missile impact. In short, if the vehicle crashes / missile impact is big enough that it has damaged more than one safety system, or more than one train of a safety system, then the vehicle crashes / missile impact is big enough to justify an Alert declaration. Damage to Plant Vital Structures must be to the extent that EC judgement must be used to determine if the structure is still capable of performing its design function. Any security aspects of this event should be considered under EAL sections covering Security Events.

DEVIATION

None

REFERENCES

NUMARC NESP-0007, HA1.5 and HA1.6
NUMARC Questions and Answers, June 1993, "Hazards Question #6"

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.1.a

IC INITIATION OF ANY UNIT SHUTDOWN REQUIRED BY THE TECHNICAL SPECIFICATIONS
[10CFR50.72(b)(1)(i)(A); 10CFR50.36(c)(1)]

RAL

Unit shutdown is INITIATED to comply with Technical Specifications

MODE - 1, 2

BASIS

This RAL expresses the conditions requiring a one hour report in accordance with 10CFR50.72(b)(1)(i)(A). This RAL is intended to capture those events for which a Technical Specification required shutdown is initiated Thus, this RAL ensures that the NRC is provided with early warning of safety significant conditions serious enough to warrant a plant shutdown.

Unit shutdown is defined as the performance of any action(s) to start reducing reactor power to achieve a plant shutdown as required by techinical specifications. This includes any means of power reduction such as rod insertion or boron concentration changes.

A reduction of power for some other purpose, not constituting initiation of a shutdown required by Technical Specifications, is not reportable under this EAL. This includes reducing power only for the purpose of repairing a component.

REFERENCES

10CFR50.72(b)(1)(i)(A)
NUREG 1022, Rev.1, 2nd Draft

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.1.b

IC EXCEEDING ANY TECHNICAL SPECIFICATION SAFETY LIMIT [10CFR50.72(b)(1)(i)(A); 10CFR50.36(c)(1)]

RAL

Exceeding EITHER one of the following Technical Specification Safety Limits: • T/S 2.1.1 Power, Pressure, Temperature combination • T/S 2.1.2 RCS Pressuire

MODE - 1, 2, 3, 4, 5

BASIS

This RAL expresses the conditions requiring a one hour report in accordance with 10CFR50.36(c)(1) which states that exceeding a Technical Specification Safety limit requires a shutdown by Technical Specification (or, if already in Modes 3, 4, or 5, a restoration of RCS pressure to within its limits within 5 minutes). For any Mode of operation, exceeding either Safety Limit Tech Spec in Section 2.1 shall be reported under this RAL.

REFERENCES

10CFR50.36(c)(1)

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.1.c

IC ANY DEVIATION FROM T/S OR LICENSE CONDITION PURSUANT TO 10CFR50.54(x) [10CFR50.72(b)(1)(i)(B)]

RAL

Action required because no action consistent with Technical Specifications or license can provide adequate or equivalent protection in an emergency (see NC.NA-AP.ZZ-0005(Q) for guidance on deviation from procedures) NOTE: Such action must be approved by at least a licensed SRO

MODE - All

BASIS

This RAL expresses conditions that require a one hour report in accordance with 10CFR50.72(b)(1)(i)(B). 10CFR50.54(x) generally permits licensees to take reasonable action in an emergency even though the action departs from license conditions or plant Technical Specifications if 1) the action is immediately needed to protect the public health and safety, and 2) no action consistent with the license conditions and Technical Specifications is immediately apparent that can provide adequate or equivalent protection. Such action requires, at a minimum, prior approval by a licensed Senior Reactor Operator. Refer to NC.NA-AP.ZZ-0005(Q), Station Operating Practices, for more information concerning the use of 10CFR50.54(x).

REFERENCES

10CFR50.54(x)
10CFR50.54(y)
10CFR50.72(b)(1)(i)(B)
NC.NA-AP.ZZ-0005(Q)
NUREG 1022, Rev. 1, 2nd Draft

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.2.a

IC STEAM GENERATOR TUBE INSPECTIONS WHICH FALL INTO CATEGORY C-3 THAT HAVE BEEN EVALUATED FOR REPORTABILITY [10CFR50.72(b)(2)(i);T/S 4.4.5.2(6.2)]

RAL

Results of SG tube inspections which fall into category C-3 of T/S 4.4.5.2 (Unit 1) or T/S 4.4.6.2 (Unit 2) **AND** An engineering evaluation has determined that it is reportable pursuant to 10CFR50.72(b)(2)(i)

MODE - 5, 6, defueled

BASIS

T/S 4.4.5.5c(U-1) and 4.4.6.5c(U-2) Category C-3 require that the results of any Steam Generator Tube inspections that are performed while in Mode 5, 6 or defueled be evaluated for Steam Generator operability before exiting these Modes.

10CFR50.72(b)(2)(i) requires a 4 hour report on any event, found while the reactor is shutdown, that, had it been found while the reactor was in operation, would have resulted in the plant's principle safety barriers being seriously degraded.

REFERENCES

10CFR50.72(b)(2)(i)
TS 4.4.5.5c(U/1)
TS 4.4.6.5c(U/2)

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.2.b

IC ABNORMAL DEGRADATION OF THE CONTAINMENT STRUCTURE DETECTED DURING SHUTDOWN THAT HAS BEEN EVALUATED FOR REPORTABILITY [10CFR50.72(b)(2)(i); T/S 4.6.1.6.2]

RAL

Any abnormal degradation of the Containment structure detected by visual inspection of exposed accessible interior and exterior surfaces during shutdown **AND** An Engineering evaluation has determined that it is reportable pursuant to 10CFR50.72(b)(2)(i)

MODE - 3, 4, 5, 6, Defueled

BASIS

This RAL is based on the reporting requirements of 10CFR50.72(b)(2)(i), which requires a four hour report for any condition found while the plant is shutdown that would have resulted in serious plant degradation or being in an unanalyzed condition. Events which meet the threshold for this RAL may include one or more procedural errors or equipment failures and/or discovery of design, analysis, fabrication, construction and/or procedural inadequacies.

REFERENCES

10CFR50.72 (b)(2)(i)
T/S 4.6.1.6.2

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.3.a

IC VIOLATION OF THE REQUIREMENTS CONTAINED IN THE OPERATING LICENSE [Salem Unit 2 Operating License, Sections 2.I]

RAL

Violation of the requirements contained in Section 2.C (Items 3 through 25) or Section 2E, 2F, or 2G of the Salem Unit 2 Operating License

MODE - All

BASIS

This RAL expresses the conditions for a twenty-four hour report in accordance with Item 2.I of the Operating License of SGS Unit 2. SGS Unit 1 Operating License does not contain similar reporting criteria.

REFERENCES

Salem Unit 2 Operating License, Sections 2.c and 2.I

11.0 Reportable Action Levels

11.1 Technical Specifications

REPORTABLE ACTION LEVEL - 11.1.3.b

IC ANY EVENT REQUIRING AN ENGINEERING EVALUATION BY TECHNICAL SPECIFICATIONS OR COMMITMENT
[U1 T/S 3.4.9.1, 3.4.9.2, 3.4.7, 3.7.9, JAN 1983, LTR TO NRC, 3.7.2.1]
[U2 T/S 3.4.10.1, 3.4.10.2, 3.4.8, 3.7.9, JAN 1983, LTR TO NRC, 3.7.2]

RAL

As judged by the SNSS/EDO, ANY one of the following conditions have been satisfied:

- Any of the T/S LCOs for RCS or PZR heatup or cooldown rates **are exceeded**
- The concentration of either chloride or fluoride in the RCS is **in excess** of its Steady State Limit for **more than 24 hours** or in **excess of its Transient Limit**, thereby requiring an engineering evaluation to determine the effects of the out of limit condition on the structural integrity of the RCS
- **One or more** snubbers are found to be INOPERABLE and have been replaced or restored to an OPERABLE status, an engineering evaluation shall be performed per T.S. 4.7.9c
- Any PZR code safety valve **discharges**
- The temperature of either the primary or secondary coolant in any steam generator is **< 70°** F when the pressure of either the primary or secondary coolant in the Steam Generator is **> 200 psig**

MODE - All

BASIS

These events require an engineering evaluation of the effects of the transient on plant materials and future operation. This RAL ensures that timely internal notification is initiated to implement the evaluations.

REFERENCES

1. [T/S 3.4.9.1 OR 9.2] U1
   [T/S 3.4.10.1 OR 10.2] U2
2. T/S 3.4.7 U1
   T/S 3.4.8 U2

3. T/S 3.7.9
   T/S 3.7.9
4. JAN 1983, LTR TO NRC
5. T/S 3.7.2.1 U1
   T/S 3.7.2 U2

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

REPORTABLE ACTION LEVEL - 11.2.1.a

IC ANY EVENT OR CONDITION DURING OPERATION THAT RESULTS IN THE CONDITION OF THE PLANT BEING SERIOUSLY DEGRADED [10CFR50.72(b)(1)(ii)]

RAL

As judged by the SNSS/EDO, an event or condition found during plant operations that results in ANY one of the following:

- The condition of the plant, including its principle safety barriers, being seriously degraded.
- The plant being in an unanalyzed condition that significantly compromises plant safety.
- The plant being in a condition outside the design basis of the plant.
- The plant being in a condition not covered by normal/abnormal or emergency operating procedures.

MODE - 1, 2

BASIS

Reporting at the component, system, and structure level is required per the above condition.

The condition of the plant, including its principle safety barriers, being seriously degraded includes material (e.g., metallurgical or chemical) problems that cause abnormal degradation of the principle safety barriers, (Fuel Clad, RCS, Containment). Examples include:

- Fuel clad failure in reactor or spent fuel pool that exceed expected values, are unique or wide spread, are caused by unexpected factors and involve a release of significant quantities of fission products.
- Cracks and breaks in RCS piping, reactor vessel or major RCS components.
- Significant welding or material defects in the RCS.
- Serious temperature or pressure transients.
- Loss of relief/safety valve functions.
- Loss of containment integrity including excessive containment leakage, loss of containment isolation valve function, loss of containment cooling.

The plant being in an unanalyzed condition that significantly compromises plant safety refers to conditions potentially affecting a system, structure or component which are more than of a minor safety significance. It is not intended that this Action level (RAL) apply to minor variation in Parameters or to problems concerning single pieces of equipment. The NRC understand that PSE&G will use engineering judgement and experience to determine if an unanalyzed condition exist.

If when applying engineering judgement there is doubt as to whether to report or not the NRC recommends that the licensee make the report.

The plant being in a condition that is outside design bases would include errors found in the actual design of structures, systems or components which perform safety functions. It would not include minor infractions such as:

- Cases of technical inoperability where a component is declared inoperable because of surveillance is overdue.
- Case where LCO allowed outage time is slightly exceeded.

Example of conditions that would be reportable under this RAL include:

- Discovery that an ECCS design does not meet single failure criteria
- Discovery that require high energy line break restraints not being installed.
- One train of a safety systems has been incapable of performing its design function for an extended time.

REFERENCES

10CFR50.72(b)(1)(ii)
NUREG 1022, Rev.1, 2nd Draft

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

REPORTABLE ACTION LEVEL - 11.2.1.b

IC PIPE CRACKS IN STAGNANT BORATED WATER SYSTEMS [IE Bulletin 79-17]

RAL

Cracks in weld areas of Borated Safety Related piping (as reported by Engineering or ISI/MIET)

MODE - All

BASIS

This RAL deals with cracks in safety-related stainless steel piping systems and portions of systems which contain oxygenated, stagnant or essentially stagnant borated water.

REFERENCES

IE Bulletin 79-17

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

REPORTABLE ACTION LEVEL - 11.2.2.a

IC ANY EVENT FOUND WHILE SHUTDOWN THAT WOULD HAVE SERIOUSLY DEGRADED THE PLANT OR RESULTED IN BEING IN AN UNANALYZED CONDITION [10CFR50.72(b)(2)(i)]

RAL

Any event, found while the reactor is shutdown, that, if had it been found during operation, would have resulted in the plant, including its principle safety barriers being in EITHER one of the following conditions: • Seriously degraded • In an unanalyzed condition that significantly compromises Plant safety

MODE - 3, 4, 5, 6, defueled

BASIS

See RAL 11.2.1.a for more information concerning the two plant conditions described in the above RAL.

REFERENCES

10CFR50.72(b)(2)(i)
NUREG 1022, rev.1, 2nd Draft

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

REPORTABLE ACTION LEVEL - 11.2.2.b

IC EVENT/CONDITION THAT ALONE COULD HAVE PREVENTED CERTAIN SAFETY FUNCTIONS [10CFR50.72 (b)(2) (iii)]

RAL

Any event or condition that **alone could have prevented** the fulfillment of the safety function of structures or systems that are needed to perform ANY one of the following:

- Control the release of radioactive material
- Shutdown the reactor and maintain it in a safe shutdown condition
- Remove residual heat
- Mitigate the consequences of an accident

MODE - All

BASIS

The intent of this RAL is to require reporting of events or conditions that could have prevented systems from performing their safety functions (actually or potentially) regardless of when the failure was discovered, whether the system was needed at the time, or whether an alternate system or means was available to perform the safety function.

The phrase "alone could have prevented" means the event or condition was, or would be, sufficient by itself to prevent the performance of the safety function(s) of a system or structure (i.e. no additional single failure is assumed or needed to prevent the function).

This RAL covers an event or condition where structures, components or trains of a Safety Systems could have failed to perform their intended functions because of:

- One or more personnel errors including procedure violations or inadequate maintenance.
- Design analysis, fabrication, equipment qualification, construction, or procedural deficiencies.
- Equipment failure if the failure constitutes a condition where there is reasonable doubt that the redundant train or channel is operable. Note: For systems with 3 or

more trains the failure of >2 trains should be reported if the functional capability of overall system is/was jeopardized.

For a single train safety system, loss of the single train would prevent the fulfillment of the safety function of that system and is therefore reportable even though the plant technical specifications may allow such a condition to exist for a limited time.

Individual component failure need not be reported under this RAL if redundant equipment in the same system was operable and available to perform the required safety function.

REFERENCES

10CFR50.72 (b)(2) (iii)
NUREG 1022, Rev. 1, 2nd Draft

11.0 Reportable Action Levels

11.2 Design Basis / Unanalyzed Condition

REPORTABLE ACTION LEVEL - 11.2.2.c

IC PRESENCE OF A LOOSE PART IN THE REACTOR COOLANT SYSTEM [Reg. Guide 1.133]

RAL

Presence of a loose part in the RCS is **confirmed**

MODE - ALL

BASIS

This RAL expresses the conditions requiring a prompt notification with written followup report of operating information in accordance with Regulatory Guides 1.133 and 1.16. Presence of a loose part maybe indicated by an overhead alarm and can be monitored both visually and audibly on the Metal Impact Monitoring System (MIMS).

The presence of a loose part (i.e., disengaged and drifting) in the primary coolant system can be indication of degraded reactor safety resulting from failure or weakening of a safety restraint component. Loose parts may also come from an item left in the RCS during refueling, or maintenance and can contribute to component damage and material wear by frequently impacting on other parts of the system. In addition, loose parts can pose a serious threat to flow blockage which could lead to localized cladding failure or control rod jamming.

Confirmed indicates that an evaluation of a loose parts alarm has determined that the alarm is due to a loose part and not to detected failure or other plant events.

REFERENCES

Reg. Guide 1.16
Reg. Guide 1.133, rev.1

11.0 Reportable Action Levels

11.3 Engineered Safety Features (ESF)

REPORTABLE ACTION LEVEL - 11.3.1

IC Any Event that results or should have resulted in ECCS Discharge into the RCS as the result of a **VALID** signal [10CFR50.72(b)(1)(iv)]

RAL

Valid ECCS Actuation, Manual or Automatic, has or should have occurred **AND** ECCS Actuation resulted in or should have resulted in, discharge to the vessel

MODE - All

BASIS

NRC experience has shown that events that involve ECCS discharge to the vessel are generally more serious than ESF actuations without discharge to the vessel and thus warrant a one-hour report. Those events that result in either automatic or manual actuation of ECCS or would have resulted in actuation of the ECCS if some component had not failed or an operator action had not been taken are reportable. For example, if a valid ECCS signal was generated by plant conditions and the operator put all ECCS pumps in pull-to-lock position, although no ECCS discharge to the vessel occurred, the event is reportable. A valid signal refers to an intentional manual actuation or actual plant conditions or parameters satisfying the requirements for ECCS initiation. Excluded from this reporting requirement would be those instances in which instruments drift, spurious signals, human error or other invalid signal causing action (e.g. jarring a cabinet, an error in the use of jumpers or lifted leads, error in actuation of controls or switches, or equipment failures). If the ECCS discharges or should have discharged into the RPV as result of an INVALID signal then a report under this RAL is not required however RAL 11.3.2 (ESF Actuation) should be reviewed for applicability.

REFERENCES

NC.NA-AP-0006(Q)

HCGS UFSAR
10CFR50.72(b)(1)(iv)
10CFR50.73
NUREG 1022, Rev.1, 2nd Draft

11.0 Reportable Action Levels

11.3 Engineered Safety Features (ESF)

REPORTABLE ACTION LEVEL - 11.3.2

IC ACTUATION OF ENGINEERED SAFETY FEATURE (INCLUDING THE REACTOR PROTECTION SYSTEM) EXCEPT PREPLANNED [10CFR50.72(b)(2)(ii)]

RAL

Any event or condition that results in manual or automatic actuation of any Engineered Safety Feature (ESF), except as part of a preplanned sequence during operation or testing, including the Reactor Protection System (RPS)(Manual or Automatic Trip) **AND** ESF / RPS Actuation is determined to be reportable in accordance with NC.NA-AP-0006(Q)

MODE - All

BASIS

This RAL expresses the conditions requiring a four hour report in accordance with 10CFR50.72(b)(2)(ii). All ESF actuations, including those of the RPS, are reportable regardless of the plant operating mode or power level, the significance of the structure, system, or component that initiated the event, or whether initiated manually or automatically. The fact that the safety analysis assumes that an ESF system will actuate automatically under certain plant conditions does not preclude the need to report such actuations.

The following exceptions apply:

1 Actuations that result from and are part of the preplanned sequence during testing or reactor operation. This implies that the procedural step indicates the specific ESF RPS actuation that will be generated, and control room personnel are aware of the specific signal generation before its occurrence or indication in the control room.

However, if the ESF actuates during the planned operation or test in such a way that it is not part of the planned procedure, such as at a wrong step, that event is reportable.

2. Invalid actuations that occur when a system has been properly removed from service if all requirements of plant procedures for removing equipment from service have been met. This

would include required clearance documentation, equipment and control board tagging, and properly positioned valves and power supply breakers.

NC.NA-AP-0006(Q), Incident Report/Reportable Event Program and Quality/Safety Concern Reporting System, Attachment 4 provides additional guidance on the reportability and reporting requirements for such events.

REFERENCES

NC.NA-AP-0006(Q), Attachment 4
SGS UFSAR
10CFR50.62
10CFR50.72(b)(2)(ii)
10CFR50.73
NUREG 1022, Rev.1, 2nd Draft

11.0 Reportable Action Levels

11.4 Personnel Safety / Overexposure

REPORTABLE ACTION LEVEL - 11.4.1

IC ANY INCIDENT OR EVENT INVOLVING BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL CAUSING ANY OF THE LISTED RESULTS [10CFR20.2202(a)(1); 10CFR20 App. B]

RAL

PERSONNEL OVEREXPOSURE or potential for overexposure as indicated by ANY one of the following:

- **TEDE** exposure ≥ **25 REM**
- **LDE** exposure ≥ **75 REM**
- **SDE** exposure ≥ **250 REM**
- Release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥ **5** times the occupational ALI (annual limit of intake) which would usually equate to **25 Rem CEDE**. This applies to areas where personnel are not normally stationed during routine operations

MODE - All

BASIS

This RAL expresses the conditions requiring an immediate report in accordance with 10CFR20.2202(a)(1). Annual Limits on Intake are discussed in Appendix B of 10CFR20.

Terms:

TEDE =	Total Effective Dose Equivalent (integrated dose that consists of the sums of the external dose equivalent, committed effective dose equivalent and 4-day deposition exposure)
LDE =	Lens Dose Equivalent (dose equivalent to the eye)
SDE =	Shallow Dose Equivalent (dose equivalent to the skin or extremities)
CEDE =	Committed Effective Dose Equivalent
ALI =	Annual Limit of Intake

REFERENCES

10CFR20.2202(a)(1)
10CFR20 App. B

11.0 Reportable Action Levels

11.4 Personnel Safety / Overexposure

REPORTABLE ACTION LEVEL - 11.4.2.a

IC ANY INCIDENT OR EVENT INVOLVING BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL CAUSING ANY OF THE LISTED RESULTS [10CFR20.2202(b)(1)]

RAL

PERSONNEL OVEREXPOSURE or potential for overexposure as indicated by ANY one of the following:

- **TEDE** exposure ≥ **5 REM**
- **LDE** exposure ≥ **15 REM**
- **SDE** exposure ≥ **50 REM**
- Release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥ **1** times the occupational ALI (annual limit of intake) which would usually equate to **5 Rem CEDE**. This applies to areas where personnel are not normally stationed during routine operations.

MODE - ALL

BASIS

This RAL expresses the conditions requiring a 24 hour report in accordance with 10CFR20.2202(b)(1). Annual Limits on Intake are discussed in Appendix B of 10CFR20. Because events that result in personnel overexposure may result in media interest or notifications to other government agencies, the RAL will result in a 4 Hr. report in accordance with 10CFR50.72(b)(2)(vi).

Terms: (The below listed terms are defined in RAL 11.3.1.f)

TEDE = Total Effective Dose Equivalent
LDE = Lens Dose Equivalent
SDE = Shallow Dose Equivalent
CEDE = Committed Effective Dose Equivalent
ALI = Annual Limit of Intake

REFERENCES

10CFR20.2202(b)(1)
10CFR20 App. B
10CFR50.72(b)(2)(vi)

11.0 Reportable Action Levels

11.4 Personnel Safety / Overexposure

REPORTABLE ACTION LEVEL - 11.4.3

IC SIGNIFICANT FITNESS FOR DUTY EVENTS [10CFR26.73(a)]

RAL

Any event that is determined to be reportable by the Medical Review Officer (MRO) or designee I.A.W. PSE&G's Fitness for Duty Program (NC-NA-AP.ZZ-0042(Q)) **AND** The reportable details of the event are made available to the SNSS by the MRO or designee.

MODE - All

BASIS

NC-NA-AP.ZZ-0042(Q) provides the guidance to determine reportability of Fitness for Duty which requires a 24 hour report in accordance with 10CFR26.73. Only the Medical Review Officer or designee may determine reportability of these events for PSE&G, unless the event has safeguards significance, in which case the determination to report is made by security.

REFERENCES

NC-NA-AP.ZZ-0042(Q)
10CFR26.73(a)

11.0 Reportable Action Levels

11.5 Environmental

REPORTABLE ACTION LEVEL - 11.5.2.a

IC SPILL/DISCHARGE OF ANY NON-RADIOACTIVE HAZARDOUS SUBSTANCE [10CFR50.72(b)(2)(vi); N.A.J.C. 7:1E]

RAL

Spill/discharge of an industrial chemical or petroleum product outside of a plant structure within the owner controlled area that results in EITHER one of the following:

- Spill / discharge that has passed through the **engineered fill** and into the **ground water** as confirmed by licensing
- Spill / discharge that CANNOT be cleaned up within **1 hour** and no contact with groundwater is suspected

NOTES:

This event MAY require immediate (15 minute) notifications. Do not delay implementation of Attachment 16. Contact licensing per ECG Attachment 9 for guidance concerning reportability as necessary.

MODE - All

BASIS

This RAL expresses the conditions requiring reports in accordance with PSE&G's DPCC/DCR Plan. The intent of this RAL is to direct implementation of ECG Attachment 16, which will provide direction on reportability based upon the nature of the Discharge/Spill as well as the expertise of licensing personnel concerning requirements.

REFERENCES

10CFR50.72(b)(2)(vi)
N.A.J.C. 7:1E
DPCC/DCR Plan, Part III

11.0 Reportable Action Levels

11.5 Environmental

REPORTABLE ACTION LEVEL - 11.5.2.b

IC SPILL/DISCHARGE OF ANY NON-RADIOACTIVE HAZARDOUS SUBSTANCE INTO OR UPON THE RIVER [10CFR50.72(b)(2) (vi); N.A.J.C.7:1E]

RAL

EITHER one of the following events occur:

- Observation of a spill/discharge of an **industrial chemical** or **petroleum product** from on-site into the Delaware River or into a storm drain
- Observation of an oil slick on the Delaware River which may have originated from Salem or Hope Creek Station.

NOTES:

This event WILL require immediate (15 minute) notifications. Do not delay implementation of Attachment 16. Contact licensing per ECG Attachment 9 for guidance concerning reportability as necessary.

MODE - All

BASIS

This RAL expresses the conditions requiring reports in accordance with PSE&G's DPCC/DCR Plan. The intent of this RAL is to direct implementation of ECG Attachment 16, which will provide direction on reportability based upon the nature of the Discharge/Spill as well as the expertise of licensing personnel concerning requirements.

REFERENCES

10CFR50.72(b)(2) (vi)
N.A.J.C.7:1E
DPCC/DCR Plan, Part III

11.0 Reportable Action Levels

11.5 Environmental

REPORTABLE ACTION LEVEL - 11.5.2.c

IC UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS [ENVIRONMENTAL PROTECTION PLAN]

RAL

As judged by the SNSS/EDO ANY one of the following events have occurred:

- Unusually large fish kill
- Protected aquatic species impinge on Circulating or Service Water intake screens (ex.; sea turtle, sturgeon) as reported by Site personnel
- Any occurrence of an unusual or important event that indicates or could result in significant environmental impact casually related to plant operation; such as the following:
  * Onsite plant or animal disease outbreaks
  * Mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973
  * Increase in nuisance organisms or conditions
  * Excessive bird impactation

MODE - All

BASIS

This RAL expresses the conditions requiring reports in accordance with the Environmental Protection Plan. Final determination or reportability will be made by Environmental Licensing as a result of implementing Attachment 15.

REFERENCES

SGS Technical Specifications, ENVIRONMENTAL PROTECTION PLAN

11.0 Reportable Action Levels

11.6 After The Fact

REPORTABLE ACTION LEVEL - 11.6.1

IC EMERGENCY CONDITIONS DISCOVERED AFTER-THE-FACT

RAL

Discovery of events or conditions that had previously occurred (event was NOT ongoing at the time of discovery) which EXCEEDED an Emergency Action Level (EAL) and was NOT declared as an emergency **AND** There are currently NO adverse consequences in progress as a result of the event

MODE - All

BASIS

In the event a condition is discovered to have occurred or existed that exceeded an Emergency Action Level threshold, but that no emergency was declared and the basis for the Emergency Classification no longer exists at the time of discovery, then a one hour report is required. This situation might arise due to a condition existing without detection by operating personnel. The NRC does not require actual declaration of the emergency classification to be necessary in these circumstances.

REFERENCES

Salem ECG Introduction Section
NUREG 1022, Rev. 1

11.0 Reportable Action Levels

11.7 Security / Emergency Response Capability

REPORTABLE ACTION LEVEL - 11.7.1.a

IC SAFEGUARDS EVENTS THAT ARE DETERMINED TO BE NON-EMERGENCIES BUT ARE REPORTABLE TO THE NRC WITHIN ONE HOUR [10CFR73.71(b)(1)]

RAL

Any Non-Emergency safeguards event that is reportable in accordance with 10CFR73.71 as determined by Security (SCP-15)

MODE - All

BASIS

This RAL expresses the conditions requiring a one hour report in accordance with 10CFR73.71(b)(1). These non-emergency events are outlined in Security Contingency Procedure #15. The on-duty PSE&G Security Supervisor should provide information concerning the specific event.

REFERENCES

10CFR73.71(b)(1)
SCP-15

11.0 Reportable Action Levels

11.7 Security / Emergency Response Capability

REPORTABLE ACTION LEVEL - 11.7.1.b

IC MAJOR LOSS OF EMERGENCY ASSESSMENT CAPABILITY, OFFSITE RESPONSE CAPABILITY, OR COMMUNICATIONS CAPABILITY [10CFR50.72(b)(1)(v))]

RAL

SNSS/EC determines that an event (excluding a scheduled test or preplanned maintenance activity) has occurred that would impair the ability to deal with an accident or emergency as indicated by the Loss of ANY one of the following:

- Emergency Phone System (NETS) for **>1 hour**
- P250 or Aux Annunciator System for **> 24 hours**
- SPDS for **> 8 hours** (> 2 CFSTs Inop)
- ENS for **> 1 Hr.** in the Control Room, or TSC, or EOF (n/a if reported to PSE&G by the NRC)
- Greater than or equal to **eight** Offsite sirens for **> 1 Hr.**
- Use of the TSC or EOF for **> 8 hours**
- All Meteorological data (Salem AND Hope Creek) for **> 8 hours**
- Site access due to Acts of Nature (snow, flood, etc.)
- ALL Plant vent radiation effluent monitors for **> 8 hours**
- All or most (> 75%) OHA's for **< 15 minutes**
- Concurrent multiple accident or emergency condition indicators which in the judgement of the SNSS significantly impairs assessment capabilities

MODE - All

BASIS

NOTE: If losses are part of a scheduled test or preplanned maintenance activity when compensatory actions have been taken, then no report is required.

1. Loss of the NETS or ENS for > 1 hour directly affects the ability to promptly notify and communicate with the NRC and/or Offsite officials. Refer to ECG Section 8.2 if a total loss of communications capabilities has occurred. If notified by the NRC Operations Officer of an inoperable ENS line, no further notification is necessary.

2. Loss of Off-site sirens (>10%) represents a loss of ability to promptly notify a large portion of the population, and warrants an immediate notification. There are 71 offsite sirens in the EPZ; therefore a loss of ≥ 8 represents a 10% loss.

3. Use of the TSC and/or EOF may be vital in responding to an emergency. Loss of use of these facilities, or their supporting equipment, or ability to staff represents a significant loss of emergency response capability.

4. Loss of meteorological data for an extended period of time limits the ability to predict radiological conditions during an emergency situation. An extended loss warrants notification of the loss of this capability.

5. Limited site access may affect the ability to staff the site personnel and/or emergency response facilities, and the ability of off-site agencies to implement emergency plan requirements. If possible, notification should be made when site reaction to anticipated conditions is commenced.

6. Loss of plant vent radiation monitors (R41A, B, C and R45A, B, C, D) for an extended period of time limits the ability to predict radiological conditions during an emergency situation. An extended loss warrants notification of the loss of this capability

7. Loss of SPDS for >8 hours (2 CFSTs Inop) is considered an event that significantly impairs safety assessment capabilities.

8. A loss of OHAs for a short period of <15 minutes is considered a loss of emergency assessment capability. If OHAs are lost or were lost for >15 minutes then Section 8.2 of the ECG should be referred to.

REFERENCES

10CFR50.72(b)(1)(v)
NUREG-1022

11.0 Reportable Action Levels

11.8 Public Interest

REPORTABLE ACTION LEVEL - 11.8.2.a

IC UNUSUAL CONDITIONS WARRANTING A NEWS RELEASE OR NOTIFICATION OF GOVERNMENT AGENCIES [10CFR50.72(b)(2)(vi)]

RAL

SNSS/EDO judges that an event or situation has occurred that is related to ANY one of the following:

- The health and safety of the public
- The health and safety of onsite personnel
- Protection of the environment

AND

EITHER one of the following:

- A news release is planned
- Notification to a Local, State or Federal agency has been or will be made

MODE - All

BASIS

Events that require the NRC to respond due to media or public interest, or other government agency involvement are reportable to the NRC. Examples of the events would include, but not be limited to:

- release of contaminated tools or equipment to public areas
- non-routine releases of radioactive effluents
- inadvertent operation of the offsite siren system
- state agency contacted due to fish kill
- toxic material release from the site

PSE&G generally does not have to report media and government interaction or notify the NRC of every press release issued unless they are related to, or are perceived by the public or media to be

related to, the radiological health and safety of the public or onsite personnel, or protection of the environment.

REFERENCES

10CFR50.72(b)(2)(vi)
NUREG 1022, Rev. 1

11.0 Reportable Action Levels

11.8 Public Interest

REPORTABLE ACTION LEVEL - 11.8.2.b

IC UNUSUAL CONDITIONS DIRECTLY AFFECTING LOWER ALLOWAYS CREEK TOWNSHIP (LACT) [LAC -MOU]

RAL

As judged by the SNSS/EDO, events which are the responsibility of PSE&G which have or may result in EITHER one of the following:

- Anticipated unusual movement of equipment or personnel which may significantly affect local traffic patterns.
- Onsite events which involve alarms, sirens or other noise which may be heard off-site.

MODE - All

BASIS

This RAL expresses the conditions for a four hour report in accordance with the Lower Alloways Creek Township Memorandum of Understanding (MOU) with PSE&G.

REFERENCES

LAC -MOU

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.1.a

IC UNPLANNED / ACCIDENTAL CRITICALITY [10CFR70.52(a)]

RAL

Any unplanned or accidental criticality

MODE - 2, 3, 4, 5, 6

BASIS

Any unplanned or accidental criticality requires a 1 Hour report based on 10CFR 70.52(a).

REFERENCES

10CFR70.52(a)

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.1.b

IC LOSS AND INVESTIGATION OF THE LOSS OF SPECIAL NUCLEAR MATERIALS/ SPENT FUEL [10CFR73.27(c), 10CFR73.71(a)]

RAL

ANY one of the following events occur involving SNM or Spent Fuel:

- Shipment of Special Nuclear Material (SNM) or Spent Fuel that is lost or unaccounted for after the estimated time of arrival
- A lost or unaccounted for shipment of SNM or Spent Fuel has been recovered or accounted for
- Results of a trace investigation of lost or unaccounted for SNM shipment are received

MODE - All

BASIS

This RAL expresses the conditions requiring a one hour report in accordance with 10CFR73.27(c) and 10CFR73.71(a). 10CFR73.71(a)(1) requires a one hour report of a shipment loss, and on recovery of a lost shipment. 10 CFR 73.27(c) requires an immediate trace investigation of lost or unaccounted for shipments and reporting in accordance with 10CFR73.71.

Definition of SNM terms is provided in the basis for RAL 11.3.1.a.

REFERENCES

10CFR73.27(c)
10CFR73.71(a)

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.1.c

IC THEFT OR LOSS OF LICENSED MATERIAL [10CFR20.2201(a)(1)(i)]

RAL

Lost, stolen or missing licensed material > **1000** times the quantity specified in 10CFR20 Appendix C in such circumstances that an exposure could result to persons in unrestricted areas.

MODE - All

BASIS

This RAL expresses the conditions requiring an immediate report in accordance with 10CFR20.2201(a)(1)(i).

Definitions:

Licensed material means: source material, special nuclear material, or by-product material received, possessed, used, or transferred under a general or specific license issued by the Commission pursuant to the regulations in 10CFR20.

REFERENCES

10CFR20.2201(a)(1)(i)

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.1.d

IC RECEIPT OF SNM MATERIAL [10CFR73.27(b)]

RAL

Receipt of shipment of **strategic Special Nuclear Material (SNM)**

MODE - All

BASIS

This RAL expresses, in part, the conditions requiring an immediate report in accordance with 10CFR73.27(b).

Strategic Special Nuclear Material is Uranium 235 (contained in uranium enriched to 20% or more in the U-235 isotope), U-233 or Plutonium.

REFERENCES

10CFR73.27(b)

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.1.e

IC EXCESSIVE CONTAMINATION AND/ OR RADIATION LEVELS ON A PACKAGE [10CFR20.1906(d)]

RAL

Receipt survey indicates that package contamination / radiation levels equal or exceeds ANY one of the following:

- **2200 dpm/100 cm^2**
- **200 mR/hr on contact**
- **10 mR/hr at 3 feet**

MODE - All

BASIS

This RAL expresses the conditions requiring an immediate report in accordance with 10CFR20.1906(d). This requirement refers to values provided in 10CFR71.87(i)(1) for contamination, and to 10CFR71.47 for radiation levels. The RAL contamination level is based on the limit, adjusted for the standard swipe area used at Salem Generating Station. 10CFR71.87(i)(2) allows contamination levels of 10 times the above limits for Exclusive Use Shipments (Refer to 10CFR71.87(i)(2) and 71.4 for explanation) (see definition). This limit applies only to packages during or after transport, the limits as stated in the EAL apply to packages prior to transport. The radiation levels are the limit values.

DEFINITIONS:

Exclusive Use means: the sole use of a conveyance by a single consignor and for which loading and unloading are carried out with the direction of the consignor or consignee.

REFERENCES

10CFR20.1906(d)
10CFR71.4

10CFR71.47
10CFR71.87(i)(1)/(2)

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.2.a

IC ACCIDENT OCCURRING DURING TRANSPORTATION OF LICENSED MATERIAL [10CFR71.5(a)(1)(v)]

RAL

Accidents during the transportation of **radioactive material** which are reported to PSE&G as the shipper that involve (or potentially involve) damage to the cargo

MODE - All

BASIS

10CFR71.5(a)(1)(v) refers to 49CFR171.15/16 for transportation of licensed accident reporting. Note: Vehicle breakdowns or delays enroute may also be reported by the driver, but are not reportable to the NRC unless an accident is involved (cargo damage).

Definitions:

Radioactive Material means: Any item, gas, liquid, flowable solid, or material with radioactivity levels in excess of the limits for unconditional release found in Section 5.1.1. of NA-AP.ZZ-029(Q) Radioactive Material Control Program.

REFERENCES

10CFR71.5(A)(1)(V)
49CFR171.15/16

11.0 Reportable Action Levels

11.9 Accidental Criticality/Special Nuclear Material/Rad Material

REPORTABLE ACTION LEVEL - 11.9.2.b

IC INADVERTANT RELEASE OF RADIOACTIVE CONTAMINATED MATERIAL [10CFR50.72(b)(2)(vi)]

RAL

As judged by the SNSS/EDO, EITHER of the following events has occurred:

- Unusual or abnormal release of radiological effluents
- Release of radiologically contaminated tools or equipment to public areas

AND

EITHER one of the following:

- A news release is planned
- Notification to Local, State or Federal Agencies has been or will be made

MODE - All

BASIS

The purpose of the RAL is to ensure that the NRC is made aware of issues that will cause heightened public or government concern related to the radiological health and safety of the public or onsite personnel or protection of the environment.

Radiological effluent releases that are >2 times Technical Specifications limits are classified in accordance with ECG Section 6.

REFERENCES

10CFR50.72(b)(2)(vi)
NUREG 1022, Rev.1, 2nd Draft

NUMARC TO SALEM CROSS REFERENCE

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
AU1.1	6.1.1.d	None
AU1.2	6.1.1.c , 6.2.1	None
AU1.3	6.1.1.b	None
AU1.4	6.1.1.a	None
AU2.1	6.3.1.b	NUMARC states that this EAL will be applicable in all modes of operation. In modes other than Mode 6 the Reactor Vessel head will be fully tensioned and there will be no interconnection between the Refueling Cavity and the Spent Fuel Pool. In other modes, a loss of Reactor Vessel inventory is addressed in Section 3. Uncontrolled loss of water level in the Spent Fuel Pool, however, is classified under EAL 6.3.1.c in all modes of operation.
AU2.2	6.3.1.c	None
AU2.3	N/A	SGS does not have dry spent fuel storage.
AU2.4	6.3.1.a	None
AA1.1	6.1.2.d	None
AA1.2	6.1.2.c, 6.2.2	None
AA1.3	6.1.2.b	None
AA1.4	6.1.2.a	None
AA2.1	6.3.2.c,d	None
AA2.2	N/A	This EAL is not used since if fuel was uncovered it would readout in high radiation alarms, therefore exceeding NUMARC EAL AA2.1
AA2.3	6.3.2.e	None
AA2.4	6.3.2.e	None
AA3.1	6.3.2.b	None
AA3.2	6.3.2.a	None

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
AS1.1	N/A	NUMARC EAL AS1.1 (Classification based on noble gas release rate) is not desirable per NUMARC Draft White Paper dated 7-25-94;9-10-94. The classification could be under conservative if it were made on the basis of noble gas release rate. Since dose assessment would continue in either case and the classification escalated if necessary, the impact from not having this EAL would be a delay in reaching the appropriate classification. This delay was deemed to be acceptable since in significant release situations, the plant operational conditions EALs should provide the anticipatory classifications necessary for the implementation of offsite protective measures.
AS1.2	N/A	SGS does not have telemetered perimeter monitors
AS1.3	6.1.3.a	None - Deviation for AS1.1 is documented in this basis section
AS1.4	6.1.3.b,c	None
AG1.1	N/A	NUMARC EAL AG1.1 (Classification based on noble gas release rate) is not desirable per NUMARC Draft White Paper dated 7-25-94;9-10-94. The classification could be under conservative if it were made on the basis of noble gas release rate. Since dose assessment would continue in either case and the classification escalated if necessary, the impact from not having this EAL would be a delay in reaching the appropriate classification. This delay was deemed to be acceptable since in significant release situations, the plant operational conditions EALs should provide the anticipatory classifications necessary for the implementation of offsite protective measures.
AG1.2	N/A	SGS does not have telemetered perimeter monitors
AG1.3	6.1.4.a	None - Deviation for AG1.1 is documented in this basis section
AG1.4	6.1.4.b,c	None
FC1	3.1.1.a,b,c	None
FC2	3.1.2	None
FC3	3.1.3.a,b	None
FC4	3.1.4.a,b	None
FC5	3.1.5	None

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
FC6	N/A	SGS does not have any other site specific indications for this barrier.
FC7	3.1.6	None
RC1	3.2.1.a,b	None
RC2	3.2.2.a,b	None
RC3	3.2.3.a,b	None
RC4	3.2.4	None
RC5	N/A	SGS does not have any other site specific indications for this barrier.
RC6	3.2.5	None
PC1	3.3.1.a	None
PC2	3.3.2.a,b,c,& 3.3.4.c	None
PC3	3.3.3.b	None
PC4	3.3.4.b	None
PC5	3.3.5	None
PC6	3.3.1.b	None
PC7	3.3.3.a	None
PC7	3.3.4.a	This EAL was added as a Potential Loss of Containment due to the Containment Bypass concern discussed in HU5 "Uncontrolled RCS cooldown due to Secondary Depressurization". A review of NRC Inspection Report Nos. 50-317/94-27; 50-318/94-27 for the Calvert Cliffs Nuclear Power Plant indicated that an unisolable, faulted S/G outside of containment represents at least a UE Classification. Technical Specification 3.6.3 for Containment Isolation Valves require OPERABLE Main Steam Isolation valves MS7s and MS18s. The Main Steam Isolation Valves (MS167s) also receive a MSL Isolation Signal but are covered under their own Tech. Spec 3.7.1.5. Therefore, failure of any Main Steam Isolation valve to close upon demand represents a potential loss of Containment integrity and was included in the Fission Product Barrier Table in order to properly classify events in conjunction with the RCS and Fuel Clad Barriers.
PC8	3.3.6	None

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
HU1.1	9.5.1	None
HU1.2	9.6.1.a	None
HU1.3	4.1.1	None
HU1.4	9.9.1.b	None
HU1.5	9.3.1	None
HU1.6	9.9.1.a	Modes 1,2,3 are the only MODES of operation where Main Steam pressure is high enough to allow for Main Turbine operation.
HU1.7	9.6.1.b 9.7.1.a,b 9.8.1	None
HU2	9.2.1	None
HU3.1	9.4.1.b,c	None
HU3.2	9.4.1.a	None
HU4.1	9.1.1	None
HU4.2	9.1.1	None
HU5	4.1.1	None
HA1.1	9.5.2	None
HA1.2	9.6.2	None
HA1.3	9.6.2	None
HA1.4	4.1.2	None
HA1.5	9.9.2	None
HA1.6	9.9.2	None
HA1.7	9.7.2.a,b & 9.8.2	None
HA2	9.2.2 & 9.3.2	None
HA3.1	9.4.2.a	None
HA3.2	9.4.2.b	None
HA4.1	9.1.2	None
HA4.2	9.1.2	None

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
HA5	8.3.2	None
HA6	4.1.2	None
HS1.1	9.1.3	None
HS1.2	9.1.3	None
HS2	8.3.3	None
HS3	4.1.3	None
HG1.1	9.1.4	None
HG1.2	9.1.4	None
HG2	4.1.4	None
SU1	7.1.1	None
SU2	8.4.1	None
SU3	8.2.1.c	Example 1.c is not required in this EAL as the referenced procedure describes the monitoring, surveillance, and judgement that must be made.
SU4.1	1.1.1.c	NUMARC requires this EAL to be applicable in all Modes of operation. Since there is no fuel in the Reactor vessel in Mode "Defueled", this EAL is not Applicable.
SU4.2	1.1.1.a,b	NUMARC requires this EAL to be applicable in all Modes of operation. Since there is no fuel in the Reactor vessel in Mode "Defueled", this EAL is not Applicable.
SU5	2.1.1.a,b,c	None
SU6	8.2.1.a,b	None
SU7	7.2.1.a	None
SU7	7.2.1.b	Since Salem has a 28VDC system which is required to operate pushbutton controls in the Control Room, this EAL was added. There are only two 28VDC busses, and as such, a confirmation of the inability to operate safety related equipment was added to prevent inappropriate classification.
SA1	7.1.2.b	None

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
SA2	5.1.2.a,b	NUMARC EAL SA2 suggests that an Alert classification be based on an automatic RPS trip failure followed by a successful manual trip from the control room, with EAL SS2 escalating to a Site Area Emergency if the manual trip fails. In addition, EAL SS2 basis indicates that the SAE threshold should be such that following the automatic and manual trip failure, the reactor is producing more heat than the maximum for which the safety systems were designed. The EOPs indicate that this heat load is ≥ 5%. The Salem Alert threshold was chosen so that unsuccessful manually initiated RPS trips from the control room, as well as unsuccessful automatically initiated trips via RPS would be classified at the Alert level. This will cover those situations which require a manual reactor trip under conditions where an automatic trip signal may not have been generated. In either case, failure of RPS to perform its intended function when demanded is indicated.
SA3	8.1.2	None
SA4	8.2.2.a,b	None
SA5	7.1.2.a	None
SS1	7.1.3	None
SS2	5.1.3	NUMARC EAL SA2 suggests that an Alert classification be based on an automatic RPS trip failure followed by a successful manual trip from the control room, with EAL SS2 escalating to a Site Area Emergency if the manual trip fails. In addition, EAL SS2 basis indicates that the SAE threshold should be such that following the automatic and manual trip failure, the reactor is producing more heat than the maximum for which the safety systems were designed. The EOPs indicate that this heat load is ≥ 5%. The Salem Alert threshold was chosen so that unsuccessful manually initiated RPS trips from the control room, as well as unsuccessful automatically initiated trips via RPS would be classified at the Alert level. This will cover those situations which require a manual reactor trip under conditions where an automatic trip signal may not have been generated. In either case, failure of RPS to perform its intended function when demanded is indicated.

NUMARC EAL No.	SALEM EAL No.	DEVIATIONS
SS3	7.2.3.a	None
SS3	7.2.3.b	Since Salem has a 28VDC system which is required to operate pushbutton controls in the Control Room, this EAL was added. There are only two 28VDC busses, and as such, a confirmation of the inability to operate safety related equipment was added to prevent inappropriate classification.
SS4	8.1.3.a,c,d	None
SS5	8.1.3.b	None
SS6	8.2.3	None
SG1	7.1.4.a,b,c	None
SG2	5.1.4	None

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Superseded per Revised ECG
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ARTIFICIAL ISLAND

SALEM HOPE CREEK

EVENT CLASSIFICATION GUIDE

SALEM GENERATING STATION

PSEG
The Energy People

SALEM ECG REVISION PROPOSAL/SORC SUMMARY

Effective Date to Implement is May 26, 1989

PURPOSE

To bring the Event Classification Guides (ECGs) of both Salem and Hope Creek into better alignment in order to enhance Artificial Island Emergency Preparedness. The alignment of the classifying Sections and Attachments (where practical) will improve long term maintenance of the Emergency Plan and may prevent possible confusion during implementation of the ECGs when both Stations are affected.

SCOPE

This revision requires the complete reissue of both ECGs from cover to cover. It should be noted that although this follows right on the heels of last year's complete revision to the Salem ECG for flow charting, that was a necessary first step in the overall process which this revision is intended to conclude.

SPECIFICS OF THIS REVISION

1. Reorganized existing Sections including some breakup and recombination of Emergency and Non-emergency Action Levels (hereafter referred to collectively as **EALs**) into new categories of events and conditions.

2. Renamed some Sections to better describe the contents.

3. Revised some EALs to provide consistency between Salem and Hope Creek wherever events are common in nature or closely related. (i.e. Hurricane, Flooding, etc.)

4. Created a special Attachment for listing all identified written reporting requirements for the reference of the SNSS and LER Coordinator. This attachment will supercede the existing Attachment 3 in **NA-AP.ZZ-0006(Q)** allowing the ECG to serve as the single source for identifying all Reportable Events.

5. Incorporated some technical revisions to specific EALs as needed. (see details appendixes to this summary)

6. Reorganized and condensed the number of ECG Attachments to be implemented to 23 in number (at this time). Numbering is again consistent for both ECGs.

(continued)

APPENDIX 1

SALEM ECG REVISION DETAILS

> **NOTE:**
> Unless otherwise indicated, all references to Section, EAL, IC, or Attachment numbers given in this summary refer to the New ECG proposed revision.

SECTION 1 Combined old Sections 1 and 2 into one section that addresses all Primary System leaks, including LOCA's and Tube Ruptures.
Added SNSS/EDO judgement that a RUPTURED SG exists to EAL 1J.
Added **EAL 1L** to provide overlap with EAL 18P.

SECTION 2 Moved from old Section 3.

SECTION 3 Moved from old Section 17, Pg.1.
Title changed, added a new subtitle.
Revised **EAL 3A** to clarify the intent that an Alert should be declared following a failure of the Reactor to trip automatically. A note has been added for emphasis that the Emergency is not over until the causes and consequences of the ATWT are evaluated. **EALs 3B & 3C** were revised consistently.
Added **EAL 3E** to provide overlap with EAL 18N.

SECTION 4 Moved from old Section 17, Pg.2.
Title changed, added a new subtitle.
Added **EAL 4D** to provide overlap with EAL 18N.

SECTION 5 Moved from old Section 4.
Replaced the word "spent" with "irradiated".
Revised **EAL 5E** to add decreasing fuel pool water in a rapid, uncontrolled manner as action level for an ALERT.
Revised **EAL 5F** to add Rad Release exceeding Site Area Emergency thresholds, with reference to ECG Section 7.

SECTION 6 Moved from old Section 5.
Revised **EAL 6A**'s IC to say "Severe Loss of Fuel Cladding " rather than " Degraded Core ". Degraded core refers to more significant fuel damage than is required to go to a General Emergency when coupled with other fission product boundaries being lost.
Revised the Note at the top of the page to delete the words ",with the possibility of a third,". The possibility of the third boundary failing should be assumed.

SECTION 7

Combined old Sections 6 and 7 into one section that addresses all radiological events.
Revised **EAL 7C** by adding SNSS/EDO judgement that a loss of control of radioactive materials has occurred.
Revised **EALs 7G** and **7H** to specify that "Thyroid Dose Rates" are in fact Thyroid "commitment" doses per inhalation hour of Iodine-131 airborne concentrations (not DEI-131).
Moved old EALs 6K and 7E to Attachment 23.
Added **EAL 7J**, Accident Occurring During Transportation of Licensed Material (4 Hr. Report).
Added **EAL 7L**, Receipt of SNM Material (1 Hr. Report).
Deleted old EAL 6B which is better covered in Section 16, Security Events.

SECTION 8

Revised **EAL 8B** to declare an ALERT when toxic or flammable gases are detected in any Plant Structure
Revised **EAL 8C** to require SNSS/EDO judgement that safe plant operation has been compromised.

SECTION 9

Moved from old Section 15.
Revised old EAL 9A by creating two separate EALs to address either Unit Shutdown required due to inadequate onsite A.C. Power capability or loss of offsite power as possibly separate circumstances.
Revised **EAL 9B** to specify an ALERT classification based upon "...loss of most onsite A.C. Power " rather than **ALL** onsite A.C. Power. This change is more conservative and reasonable based on the precarious situation of relying totally on One EDG when two EDGs have already failed to be operable.
Revised old EAL 9C by creating two parallel conditions. SAE will now be based on either a loss of most onsite A.C. Power for >15 mins or a total loss of A.C. Power directly (without delay).

SECTION 10

Divided old Section 16. Old EALs 16A and 16B have become EALs 10B and 10C.
Added **EAL 10A**, Indications or Alarms on Process or Effluent Parameters Not Functional in Control Room/ Loss of Assessment or Communication Capability (Unusual Event).
Added **EAL 10D**, Major Loss of Communications Capability (1 Hr. Report).

SECTION 11

Divided old Section 16. Old EALs 16C and 16D have become EALs 11A and 11B.

SECTION 12 Moved from old Section 10.

FLOOD (Pg 2 of 6)

Revised **EAL 12F** by linking the Site Area Emergency flooding threshold with River level that has compromised the function of a required safety system.(consistent with Hope Creek criteria)

Added a **Note** to provide NWS phone number for info.

HURRICANE (Pg 4 of 6)

Revised the EALs for UE and Alert by decreasing the previous wind speed thresholds to reflect the following:

A) The revised wind speeds are higher than have ever been recorded at this site and therefore the reduction is not likely to increase the number of declared emergencies.

B) Although the Facility has been designed to withstand higher winds, the emergency response depends upon the safe movement of people and therefore the lower thresholds are reasonable for the protection of site personnel and the public.

C) The revised thresholds are integrated with revised thresholds at Hope Creek.

Revised **EAL 12L** to make SAE declaration based on the effects of the High Winds rather than a threshold wind speed.

Added **Note** about the range of the Met Tower indication for wind speed.

SECTION 13 Moved from old Section 11.

SECTION 14 Moved from old Section 9.

Clarified **EALs 14B** and **14C** by adding the words "the function of" where appropriate.

SECTION 15 Moved from old Section 12.

Moved old **EAL 12D** to **Attachment 23**.

SECTION 16 Moved from old Section 13.

Added new **EAL 16I**, Safeguards Events that are Adequately Compensated For (24 Hr Report)

SECTION 17 Moved from old Section 19.

Reversed the order of EALs 17F and 17G.

SECTION 18 Combined old Sections 14 and 18 and eliminated any duplicate or previously overlapping EALs between them.

EAL 18A (old EAL 14A) was revised to reflect that only certain T/S LCO required shutdowns are necessarily Unusual Events. Any other required shutdown for T/S LCO exceeded will be considered a One Hour Report per **EAL 18F**. (old EAL 18A is deleted)

SECTION 18
(cont'd)

Deleted old EAL 14B since it is adequately addressed by **EAL 18F** as a One Hour Report.
EAL 18B replaces old EAL 14D.
EAL 18C replaces old EALs 14C and 18B.
EALs 18D & 18E are inserted here to provide some overlap with ECG Section 7, Radiological Releases.
EAL 18F replaces old EAL 18A which was deleted as an Unusual Event unless "certain" T/S LCOs are exceeded. (see new EAL 18A, above).
EAL 18G replaces old EALs 14I and 18E.
EAL 18H replaces old EALs 14F and 18D.
EAL 18I replaces old EAL 18F.
EAL 18J replaces old EALs 14E and 18C and downgrades the event from an Unusual Event to a One Hour Report, consistent with 10CFR70.52 and the Hope Creek ECG. An emergency does not exist unless there are consequences or shutdown cannot be achieved (ATWT).
EAL 18K replaces old EAL 18H.
EAL 18L is new and provides overlap to EAL 18K.
EAL 18M replaces old EAL 18G.
EAL 18N replaces old EAL 14J.
Deleted old EAL 14G which is better addressed in Sections 12, 13 and 16. This EAL may include Emergencies as well as non-emergencies.
Deleted old EAL 14H which is better addressed in **Attachment 23** under Special Reports.
Deleted old EAL 14K which is adequately addressed by **EAL 18H** or **18M** depending on Operating Mode at time of discovery.
Deleted old EAL 14L which is adequately covered by **Attachment 23.**
Deleted old EALs 14M and 18I which is adequately covered by **Attachment 23.**
Added **EAL 18O** per License Condition 2I (24 Hr Report).
Added **EAL 18P** per T/S 4.4.5.5c (U1) and 4.4.6.5c (U2) (24 Hr Report).
Added **EAL 18Q** per T/S 3.7.10.1 (24 Hr Report).
Added **EAL 18R** per T/S 4.6.1.6.2 (24 Hr Report).
EAL 18S replaces old EAL 18L.
EAL 18T replaces old EAL 18M.
Added **EAL 18U** per T/S 3.7.2.1 (U1) and 3.7.2 (U2). (engineering evaluation required)
Added **EAL 18V** per T/S 3.4.7 (U1) and 3.4.8 (U2).(engineering evaluation required)
EAL 18W replaces old EAL 14N.
Deleted old EALs 14O thru 14R which are adequately covered in **Attachment 23.**
Deleted old EALs 18J, 18K, and 18N which are adequately covered in **Attachment 23.**

APPENDIX 2

SALEM ECG ATTACHMENTS REVISION DETAILS

NOTE:
Unless otherwise indicated, all reference to Attachment numbers or steps given in this summary refer to the New ECG proposed revision.

ATTACHMENT 1 Combines the notification requirements of the four existing UE attachments (1,7,8,12) to ensure all applicable notifications are made during events that may involve some combination of circumstances. **Step C.2** was added to notify **Rad Pro Services** in the event of a contaminated injured person being transported to the hospital so that they may respond to the hospital for health physics support.

Note also that the signature page has been deleted from this and all other individual attachments in the ECG. It was not required and one common signature page will serve to document review and approval of this and future revisions.

Reporting requirements in each attachment were revised to refer the LERC to **Attachment 23** for guidance on **regulatory required written reports.**

Other editorial changes have been made at this time to this and all other attachments to improve their usage and consistency. (both ECG attachments are identical between Hope Creek and Salem now with the exception of names and phone numbers)

ATTACHMENT 2 No changes other than editorial and deleting the signature page as noted above.

ATTACHMENT 3 Same as Attachment 2.

ATTACHMENT 4 Moved from old Attachment 5, otherwise editorial changes only and deleting signature page.

ATTACHMENT 5 This number is reserved for future use if needed.

ATTACHMENT 6 Combined the old CM1 log sheets for UE, Alert, and Site Area Emergency (36,37,and 38 respectively) into one log sheet for efficiency.

ATTACHMENT 7 Moved from old Attachment 39.

ATTACHMENT 8 Moved from old Attachment 40 and revised editorially by reorganizing steps on pages 1 thru 6 to improve usage. Steps are now listed within the three major functions of the CM2, notifications, data collection/transmission, and answering incoming calls.

ATTACHMENT 9 For this and all other non-emergency notification attachments that follow, deleted the cover sheet and signature pages.

ATTACHMENT 10 Moved from old Attachment 22. Deleted the description of event page since the NRC Data Sheet serves that purpose.
Added step 7. to notify **External Affairs.**
Added a place on the **NRC Data Sheet** for recording the ECG Section and Initiating Condition designations for reference by Telecopy Group E recipients.

ATTACHMENT 11 Moved from old Attachment 21. Other changes are same as Attachment 10 above.

ATTACHMENT 12 Moved from old Attachment 6. Other changes are same as Attachment 10 above.

ATTACHMENT 13 Reserved.

ATTACHMENT 14 Moved from old Attachment 29. Modified NRC Data Sheet as stated above.

ATTACHMENT 15 Moved from old Attachment 33. Other changes are same as Attachment 10 above.

ATTACHMENT 16 Changes are same as Attachment 10 above.

ATTACHMENT 17 Combined old Attachments 17 and 18 and made other changes as indicated in Attachment 10 above.

ATTACHMENT 18 New. Created to cover required notifications in the event of **transportation accident** involving licensed radioactive material shipped from Artificial Island.

ATTACHMENT 19 Reserved.

ATTACHMENT 20 New. Created to cover required prompt or 24 Hour NRC notifications (see ECG Section 18).

ATTACHMENT 21 Moved from old Attachment 32. Title is changed to better reflect the purpose of these notifications which is to fulfill a commitment to our neighbors in LACT. (see ECG Section 18)
Step 5 was added to notify External Affairs.

ATTACHMENT 22 Moved from old Attachment 34.
Step 5 was added to notify External Affairs.

ATTACHMENT 23 This entire attachment is essentially new although some events listed were previously in other sections of the old ECG and have been moved here.

The Attachment is organized by grouping identified off normal events in order of decreasing allowable time limits for reporting to the NRC in writing following the discovery of these events or expiration of Action Statement time periods as applicable.

Each item in Attachment 23 is given with it's referenced reporting requirement document and as such, no attempt will be made here to summarize it's contents.

Your attention is directed to the opening Notes on page 1 which does summarize the intent of this attachment, that it is a guide only, and that the LER Coordinator or other individual designated by the Operations Manager is the appropriate person to make use of this information in determining Regulatory required written reports.

Incorporation of this attachment in the ECG allows for the deletion of Attachment 3 in **NA-AP.ZZ-0006(Q).**

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SALEM
EVENT CLASSIFICATION GUIDE
TABLE OF CONTENTS
November 8, 1996

SALEM
EVENT CLASSIFICATION GUIDE
TABLE OF CONTENTS - (Continued)
November 8, 1996

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SALEM
EVENT CLASSIFICATION GUIDE
ATTACHMENTS SIGNATURE PAGE

November 8, 1996

ATTACHMENT	TITLE	REV	PAGES	EFFECTIVE DATE
1.	Unusual Event	17	16	May 24,1996
2.	Alert	11	7	Nov 8,1996
3.	Site Area Emergency	11	8	Nov 8,1996
4.	General Emergency	10	10	Nov 8,1996
5.	Reserved			
6.	CM1 Log (UE/A/SAE)	30	8	Nov 8,1996
7.	CM1 Log (GE)	29	7	Nov 8,1996
8.	CM2 Log	17	15	Nov 8,1996
9.	Non-Emergency Notifications Reference	27	3	Nov 8,1996
10.	One Hour Report - NRC/Region	1	5	July 27,1990
11.	One Hour Report - NRC/OPS(Security)	2	5	July 27,1990
12.	One Hour Report - NRC/OPS	3	5	Sept 8,1995
13.	Four Hour Report - Contamination Event	0	9	Sept 8,1995
14.	Four Hour Report - NRC/OPS	4	5	Sept 8,1995
15.	Environmental Protection Plan	3	3	Sept 23,1991
16.	Spill/Discharge Reporting	6	9	Nov 28,1994
17.	Four Hour Report - Fatality/Medical	4	7	Apr 27,1993
18.	Four Hour Report - Transportation Accident	1	6	July 27,1990
19.	Twenty Four Hour Report - FFD	1	3	Sept 23,1991
20.	Twenty Four Hour Report - NRC/OPS	2	5	July 27,1990
21.	Reportable Event - LACT/MOU	0	2	May 26,1989
22.	Other/Engineering	2	3	Sept 23,1991
23.	Written Reports/LERS/Other	4	11	July 21,1995

SIGNATURE PAGE

Prepared By: DAVE FAWCETT (Rev. 40) 11/8/96
(If Editorial Revisions Only, Last Approved Revision) Date

Reviewed By: N/A N/A
Station Qualified Reviewer Date

Reviewed By: N/A N/A
Department Manager Date

Reviewed By: 11/8/96
Emergency Preparedness Manager Date

Reviewed By: N/A N/A
Director - QA/Nuclear Safety Review Date
(If Applicable)

SORC Review and Station Approvals

N/A
Mtg. No. Salem Chairman

N/A
Date

N/A
Mtg. No. Hope Creek Chairman

N/A
Date

N/A
General Manager - Salem

N/A
Date

N/A
General Manager - Hope Creek

N/A
Date

Effective Date of this Revision 11-8-96
Date

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SALEM
EVENT CLASSIFICATION GUIDE
SECTION SIGNATURE PAGE

November 8, 1996

SECTION	TITLE	REV.	PAGES	EFFECTIVE DATES
i.	Introduction	3	7	Sept 8,1995
ii.	Cross Reference - Event to Requirement	5	12	Oct 7,1995
iii.	Cross Reference - Attachment to Events	12	1	Nov 8,1996
1.	PRIMARY LEAKAGE/SG TUBE LEAKAGE	6	3	July 15,1994
2.	SECONDARY LEAKAGE	1	1	July 15,1994
3.	FAILURE TO TRIP/RPS PROBLEMS	1	2	Nov 2,1990
4.	LOSS OF DECAY HEAT REMOVAL	0	2	May 26,1989
5.	FUEL DAMAGE/DEGRADED CORE	3	2	Nov 8,1996
6.	FISSION PRODUCT BOUNDARY FAILURE	2	1	July 15,1994
7.	RADIOLOGICAL RELEASES/OCCURRENCES	7	5	Nov 8,1996
8.	NON-RADIOACTIVE LEAK/SPILL (toxic gas, oil spill, hazmat)	3	2	Jan 7,1994
9.	ELECTRICAL POWER FAILURE	3	3	Nov 18,1994
10.	LOSS OF INTRUMENTS/ALARMS/COMMUNICATIONS	6	2	Apr 10,1996
11.	CONTROL ROOM EVACUATION	0	1	May 26,1989
12.	QUAKE/STORMS (earthquake, wind, floods, etc)	4	6	Jan 7,1994
13.	SITE HAZARDS (aircraft crash, missiles, explosions, etc.)	3	5	May 12,1995
14.	FIRE	2	1	Jan 27,1995
15.	PERSONNEL EMERGENCIES/MEDICAL	2	2	Jan 7,1994
16.	SECURITY EVENTS/FFD	4	3	Sept 23,1991
17.	PUBLIC INTEREST ITEMS	10	3	Apr 10,1996
18.	TECH SPECS/PLANT STATUS CHANGES	12	6	Apr 10,1996

SIGNATURE PAGE

Prepared By: DAVE FAWCETT (Rev. 27) 11/8/96
(If Editorial Revisions Only, Last Approved Revision) Date

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Department Manager — N/A Date

Reviewed By: [signature]
Emergency Preparedness Manager — 11/8/96 Date

Reviewed By: N/A
Director - QA/Nuclear Safety Review (If Applicable) — N/A Date

SORC Review and Station Approvals

N/A
Mtg. No. Salem Chairman

N/A
Date

N/A
Mtg. No. Hope Creek Chairman

N/A
Date

N/A
General Manager - Salem

N/A
Date

N/A
General Manager - Hope Creek

N/A
Date

Effective Date of this Revision 11-8-96
Date

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CROSS REFERENCE
ATTACHMENTS TO EVENTS
SECTION iii

ATTACHMENT	EVENT/INITIATING CONDITION
1	1A, 1B, 1F, 2A, 2B, 5A, 7A, 7B, 7D, 7E, 8A, 9A, 9B, 9C, 9F, 9G, 10A, 10B, 12A, 12D, 12G, 12J, 12M, 13A, 13D, 13H, 14A, 15A, 16A, 16B, 16C, 17A, 18A, 18B, 18C, 18D, 18E
2	1C, 1G, 1H, 1I, 3A, 4A, 5B, 5C, 5E, 7C, 7F, 8B, 9D, 9H, 10C, 11A, 12B, 12E, 12H, 12K, 12N, 13B, 13E, 13F, 13I, 14B, 16D, 16E, 17B
3	1D, 1E, 1J, 1K, 3B, 4B, 5D, 5F, 7G, 8C, 9E, 9F, 9I 10D, 11B, 12C, 12F, 12I, 12L, 12O, 13C, 13G, 13J, 14C, 16F, 17C
4	3C, 4C, 6, 7H, 9G, 12P, 13K, 14D, 16G
10	7I, 7L, 7M
11	7I, 7K, 16H
12	1L, 7N (1), 8D, 10E, 15B, 17D, 17E, 18F, 18G, 18H, 18I, 18K
13	7O
14	1M, 3D, 4D, 7N (2), 15C, 17F, 18L, 18M, 18N, 18O, 18P, 18Q, 18R
15	17G,
16	8E, 8F
17	7P, 15D, 15E
18	7J
19	16I
20	18S
21	17H
22	18T, 18U, 18V, 18W, 18X

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SALEM
EVENT CLASSIFICATION
INTRODUCTION
Section i

I. PURPOSE OF THE EVENT CLASSIFICATION GUIDE (ECG)

A. It provides a central reference document which enables the Senior Nuclear Shift Supervisor (SNSS) or the Emergency Coordinator (EC) to classify emergency and non-emergency events and conditions.

B. It provides the required procedures for immediate and prompt notifications and direction to other required written reports.

C. It directs the Emergency Coordinator to implement procedures which will ensure appropriate response as required by the classified emergency level.

II. EMERGENCY CLASSIFICATION BASIS

A. The NRC/FEMA established four emergency classes for fixed nuclear facilities which are:

Unusual Event	Least Severe
Alert	| |
Site Area Emergency	
General Emergency	Most Severe

B. The Unusual Event class provides for prompt notification of minor events which could escalate to more serious conditions. Support personnel, both onsite and offsite are alerted to standby for emergency response should the situation deteriorate.

Activation of onsite emergency response facilities is an option available to the EC for circumstances that require additional support to the shift, but do not warrant full emergency response.

C. The Alert class provides for full mobilization of the PSE&G Nuclear Business Unit emergency response organization. Onsite ERFs will be activated and offsite ERFs will begin staffing in preparation to activate, if deemed necessary.

D. The Site Area Emergency class provides for the full mobilization of both onsite and offsite emergency response organizations/personnel. Onsite and offsite monitoring teams area dispatched if radioactive releases are imminent or occurring.

E. The General Emergency class provides for full mobilization of both onsite and offsite emergency response organizations/personnel. If core degradation or melting is indicated, with a potential for loss of containment, protective action recommendations such as sheltering or evacuation shall be made to the state(s) without delay.

III. DESCRIPTION OF THE EMERGENCY CLASSES

A. Unusual Event:

1. Plant events which are in progress or have occurred which indicate a potential degradation of the plant safety level.

2. The lowest level of emergency at the plant, which can usually be handled by the normal operating shift, but may involve a limited activation of onsite ERFs.

3. No releases of radioactive material requiring offsite response or monitoring are expected unless actual degradation of safety systems occurs.

B. Alert:

1. Plant events which are in progress or have occurred that are more serious than an Unusual Event which involve an actual or potential substantial degradation of the plant safety level.

2. Emergency Response personnel are required in addition to the normal operating shift. The entire emergency response organization is called in. The TSC is activated, and the EOF is manned.

3. Any release of radioactive material is expected to be limited to a small fraction of tne EPA Protective Action Guideline exposure levels.

C. Site Area Emergency:

1. Serious plant events are in progress or have occurred which involve actual or likely major failure of plant functions required for protection of the public.

2. The entire emergency response organization is activated.

3. Any release of radioactive material is not expected to exceed EPA Protective Action Guideline exposure levels beyond the plant boundary.

D. General Emergency:

1. Serious plant events are in progress or have occurred which involve actual or imminent core degradation or core melting with potential for loss of containment integrity. This is indicated by the loss of two of three fission product barriers (i.e. loss of reactor coolant and fuel damage or loss of reactor coolant and loss of containment integrity).

2. The entire emergency response organization is activated.

3. Release of radioactive material can be expected to exceed EPA Protective Action Guideline exposure levels offsite.

IV. EVENT CLASSIFICATION GUIDE STRUCTURE

A. Initiating conditions/events are of two types:

1. Specified by NUREG 0654, Appendix I. These are identifiable as emergency classes.

2. Identified by the Code of Federal Regulations (CFR), Technical Specifications, or Special Licensee Commitments. These are Reportable Events (Non-Emergencies) which do not result in the declaration of emergency classes.

B. Format

Graphic/logic diagrams identify Initiating Conditions and Emergency Action Levels (EALs) which require response, with the appropriate implementation attachments referenced.

C. Sections

All EALs may be found in one of the first 18 sections listed in the Table of Contents. Operational, radiological, security, and public interest events/conditions are included in these 18 general categories.

D. Attachments

Each Attachment is an implementing document for event description, emergency (or non-emergency) notification and reporting requirements, including necessary references and forms.

Attachment 23 provides a listing of other off normal events that have been identified in Technical Specifications or 10CFR as requiring written reports and/or Licensee Event Reports (LERs). Events found in this attachment only are not expected to be referenced during Emergency conditions but may be referred to by the plant staff subsequently to determine any additional written reports required related to either Emergency or Non-Emergency conditions.

V. EVENT CLASSIFICATION GUIDE (ECG) USE

A. The ECG is a guide. The EALs described in the ECG are not all inclusive and will not identify each and every condition, parameter or event which could lead to an event classification. If the Emergency Coordinator, using his best judgment, determines an Initiating Condition has been satisfied but the specific EAL is in question, he/she should promptly classify the event in accordance with the Initiating Condition. In any event, if the plant conditions are equivalent to one of the four emergency classes as described in Section III above, that classification should be declared.

B. To use this ECG volume, follow this sequence:

NOTE:

Confirmation of actual plant conditions should be made by comparing redundant instrumentation, indications, and/or alarms.

1. Assess the event and/or plant conditions and determine which category/section is most appropriate.

2. Refer to that Section logic diagram(s), review and identify the initiating condition.

> NOTE:
>
> The Emergency Coordinator should classify and declare an emergency before an Emergency Action Level (EAL) is exceeded if, using his best judgement, it is determined that the EAL will be exceeded.

3. Review the associated EALs and select the highest appropriate emergency level. If identification of an EAL is questionable refer to paragraph V.A above.

4. Identify and proceed to the referenced Attachment and implement.

5. After classification and Attachment initiation, return to the ECG Section to review action levels that may result in escalation/deescalation of the emergency level.

> NOTE:
>
> Logic diagrams are followed from left to right and from top to bottom. Logic is not valid if used in the opposite direction.

C. Guidance for EMERGENCY/NON-EMERGENCY conditions discovered after-the-fact.

> NOTE:
>
> Plant emergency events that are in progress or that have occurred with ongoing consequences, effects, or corrective actions should not be considered "After-The-Fact" events and should therefore be classified and declared as an ongoing emergency event.

1. EMERGENCY CONDITIONS - if "After-The-Fact" is discovered that an event or condition had occurred that exceeded an Emergency Action Level (EAL) but was not declared as an emergency and that event or condition was not ongoing at the time it was discovered, then an emergency declaration is not required. A non-emergency, One-Hour Report should be initiated in accordance with ECG Section 17, Initiating Condition "D".

2. NON-EMERGENCY CONDITIONS - if "After-The-FACT" it is discovered that an event or condition had occurred that should have resulted in the classification and implementation of a non-emergency report (1 hour, 4 hour, 24 hour) the applicable non-emergency report Attachment in the ECG should be implemented.

D. Guidance For Voluntary/Courtesy Reporting of Non-Emergency Events

In accordance with NUREG 1022, Rev 1, voluntary reporting is encouraged. PSE&G may make voluntary or courtesy NRC notification (EAL18R) concerning events or conditions which may be of interest to the NRC. The NRC responds to any voluntary notification of an event or conditions as its safety significance warrants, regardless of how PSE&G classifies the event. If it is determined at some later time that the event was reportable under a specific part of 10CFR50.72 as defined in the ECG, then PSE&G should update the NRC with this information.

E. Guidance for Non-Emergency Event Retraction

If a non-emergency event notification to the NRC was made as directed by the applicable ECG Attachment and it is later determined that the event or condition may not be reportable, the event may be retracted as follows:

1. Obtain both station General Manager's and Operations Manager's approval of any proposed retractions.

2. Complete "page 1" of the NRC Data Sheet from the ECG Attachment which was implemented to make the original notification. Event Description Section of NRC Data Sheet should explain the rationale for the retraction.

3. Contact the NRC OPERATIONS Center using the ENS and provides the "NRC Data Sheet" information. (Record on the "NRC Data Sheet" the name of the NRC Contact that received the retraction information).

4. Forward the retraction "NRC Data Sheet" with the rest of the original attachment of the ECG that was implemented when the original notification was made.

5. Licensing will provide written follow up to the NRC concerning the retraction.

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SALEM EVENT CLASSIFICATION CROSS REFERENCE

EVENT TO REQUIREMENT DOCUMENT SECTION ii

NOTE
This Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference*
1. Primary Leakage/SG Tube Leakage	
A. PZR Safety/PORV failure to reseat	UE6
B. Primary Leak exceeding T/S limits resulting in Unit shutdown	UE5
C. Primary Leak > 50 GPM	A5
D. Unisolable Primary Leak outside containment	NUMARC, Table 4
E. Primary Leak (LOCA)> total Makeup capacity	SAE1
F. Primary to Secondary leak rate trending slowly upward	AOP-SG-1 SG14 TUBE R14C67
G. Rapid plant shutdown required/initiated due to an increased potential for a S/G tube rupture	AOP-SG-1 SG14 Tube R14-C67
H. Primary to Secondary Leak with a faulted SG.	A4

* Unless otherwise identified, references are as outlined in Appendix 1, NUREG-0654 Only Initiating Event/Condition references for Emergency Classes UE - GE are listed here. Non-emergency references are included in the sections themselves.

NOTE
The Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
I. S/G tube rupture has occurred (several hundred gpm)	A2,A3
J. S/G tube rupture has occurred (several hundred GPM) with faulted S/G	SAE3
K. Primary to Secondary Leak <(several hundred GPM) and loss of offsite power	SAE5
2. Secondary Leakage	
A. SG Safety/MS-10 failure to reseat	UE6
B. Faulted SG causing a rapid uncontrolled secondary depressurization	UE17
3. Failure to trip/RPS problems	
A. Failure of the RPS to initiate and complete a trip which brings the Rx subcritical	A11
B. Failure of the RPS to automatically, or by operator action to manually, initiate and complete a trip which brings the Rx subcritical	SAE9

NOTE
The Section is not used to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
C. Transient requiring operation of shutdown systems with failure to trip, resulting in core damage or additional failure of core cooling and makeup systems	GE5c
4. Loss of decay heat removal	
A. Complete loss of any function needed for cold shutdown	A 10
B. Complete loss of any function needed for hot shutdown	SAE8
C. Transient initiated by loss of Feed and Condensate followed by failure of Aux Feed for extended period (core damage possible in several hours)	GE5b
5. Fuel Damage/Degraded Core	
A. Fuel damage indications	UE3b UE3c
B. Fuel damage resulting from a RCP seizure	A9
C. Severe loss of fuel cladding	A1b A1c
D. Degraded core with possible loss of coolable geometry	SAE2

NOTE
The Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
E. Fuel handling accident with release to FHB or Containment	A12
F. Major damage to irradiated fuel in Containment or Fuel Handling Building (FHB)	SAE10
6. Fission Product Boundary Failures(2/3)	
A. Severe loss of fuel cladding	GE2
B. Loss of Primary Coolant	GE2
C. Containment failure	GE2
7. Radiological Releases	
A. Transport of a contaminated individual from site to off-site medical facility	UE16
B. Loss, theft or diversion of any special nuclear material onsite	UE12 10CFR70.52
C. Increase in measured or calculated dose rate (mR/hr) or airborne activity level by > 1000 times (indication of severe degradation in control of radioactive materials).	A6
D. Liquid release that exceeds T/S limits for > 15 min.	UE2
E. Gaseous release that exceeds T/S limits for > 15 min.	UE2

NOTE
The Section is not to be used for Event Classification. Refers to Sections 1 thru 18.

Initiating Event/Condition	Reference
F. Gaseous release that exceeds 10 times T/S limits for > 15 min.	A15
G. Dose Rate at Minimum Exclusion Area (MEA) equivalent to 5000 mR/hr WB or 2500 mR/hr thyroid for > 2 min. (MEA is defined as any monitoring location greater than 0.79 miles away from the affected unit).	SAE13
H. Dose Rate at Minimum Exclusion Area (MEA) equivalent to 1R/hr WB or 5 R/hr thyroid.	GE1
8. Nonradioactive Leak/Spill	
A. Toxic or flammable gas release that threatens plant personnel.	UE14d
B. Toxic or flammable gas release entering vital areas.	A18d
C. Toxic or flammable gas release entering into vital areas where lack of access constitutes a safety problem	SAE16c
9. Electrical/Power Failure	
A. Loss of onsite A.C. Power capability that requires Unit Shutdown.	UE7
B. Loss of all offsite power.	UE7

NOTE
The Section is not to be used for Event Classification. Refers to Sections 1 thru 18.

Initiating Event/Condition	Reference
C. Loss of onsite power capability.	UE7
D. Loss of most offsite and onsite vital A.C. Power.	A7
E. Loss of most offsite and onsite vital A.C. Power for extended time period.	SAE6
F. Total loss of all A.C. Power.	SAE6
G. Total loss of all A.C. Power with total loss of auxiliary Feedwater capability for several hours.	GE5d
H. Loss of all onsite DC Power	A8
I. Loss of all onsite DC power for > 15 min.	SAE7
10. Loss of Instruments/Alarms/ Communications	
A. Indications or alarms on process or effluent parameters not functional in Control Room or loss of assessment or communications capability.	UE11
B. Loss of all or most OHAs	SU3 NUMARC
C. Loss of all or most OHAs and plant transient initiated or in progress	SA4 NUMARC
D. Inability to monitor a significant transient in progress.	SS6 NUMARC

NOTE
The Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
11. Control Room Evacuation	
A. Evacuation of Control Room anticipated or required.	A20
B. Evacuation of Control Room completed with control of S/D systems not established locally within 15 minutes.	SAE18
12. Earthquake/Severe Weather	
A. Earthquake/seismic event felt in-plant or instrument detected	UE13a
B. Earthquake/seismic event greater than Operating Basis Earthquake (OBE)	AL17a
C. Earthquake/seismic event greater than Design Basis Earthquake (DBE)	SA15a
D. Flood: Water level in rivers near design basis.	UE13b
E. Flood: Water level in river greater than design basis.	AL17b
F. Flood: Water level in river high.	SA15b
G. Water level in river low	UE13b
H. Water level in river low near design basis	AL17b

NOTE
The Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
12. Earthquake/Severe Weather (Cont)	
I. Water level in river lower than design basis	SA15b
J. Hurricane/unusual wind indicated by met tower instrumentation	UE13d
K. Hurricane/unusual wind indicated by met tower instrumentation-near design basis	AL17d
L. Hurricane/unusual wind indicated by met tower instrumentation-greater than design basis	SA15c
M. Tornado funnel observed, within MEA	UE13c
N. Tornado funnel observed within the protected area	A17c
O. Tornado funnel observed, affecting plant structures	SA5c
P. Any major internal or external events (e.g., floods, earthquakes, substantially beyond design basis) which could cause massive common damage to plant systems which would result in a General Emergency.	GE7
13. Site Hazards (explosions, crashes, etc.)	
A. Aircraft unusual activity over Facility or crash occurring in the MEA	UE14a

NOTE
The Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
13. Site Hazards (explosions, crashes, etc.) (Cont)	
B. Aircraft crash occurring within the Protected Area	A18a
C. Aircraft crash affecting Plant Structures	SAE16a
D. Turbine rotating component failure	UE14e
E. Turbine rotating component failure causing casing penetration	A18e
F. Missile impact onsite from any source within the Protected Area.	A18b
G. Missile impact onsite damaging a Plant Structure	SAE16b
H. Unplanned explosion affecting plant operations	UE14c
I. Unplanned explosion potentially compromising the function of one or more safety systems or normal operation of the plant	A18c
J. Unplanned explosion compromising the function of one or more safety systems	SAE16b

NOTE
The Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
13. Site Hazards (explosions, crashes, etc.) (Cont)	
K. Any major internal or external events (e.g., crashes, explosions, substantially beyond design basis) which could cause massive common damage to plant systems which would result in a General Emergency	GE7
14. Fire	
A. Fire lasting > 10 min that affects plant operations	UE10
B. Fire potentially compromising the function of one or more safety systems	A13
C. Fire compromising the function of one or more safety systems	SAE11
D. Any major fire (substantially beyond design basis) which could cause massive common damage to safety systems.	GE7
15. Personnel Emergencies	
A. Transport of a contaminated individual from site to offsite medical facility.	UE16

NOTE
This Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
16. Security Events	
A. Loss, theft or diversion of any special nuclear material onsite	UE12 10CFR70.52
B. Substantiated threat, attempted entry or discovery of a suspected destructive device or evidence of a malicious act.	UE12
C. Security Alert	UE12
D. Substantiated threat, attempted entry or disdovery of a suspected destructive device or evidence of a malicious act with a Security Alert declared.	A16
E. Ongoing security compromise	A16
F. Ongoing security compromise involving imminent loss of physical control of the plant.	SAE14
G. Ongoing security compromise resulting in the loss of physical control of the plant.	GE3
17. Public Interest Items	
A. Plant conditions exist that, in the judgement of the Emergency Coordinator, warrant the declaration of an Unusual Event.	UE15

NOTE
This Section is not to be used for Event Classification. Refer to Sections 1 thru 18.

Initiating Event/Condition	Reference
17. Public Interest Items (Cont)	
B. Plant conditions exist that, in the judgement of the Emergency Coordinator, warrant the declaration of an Alert.	A19
C. Plant conditions exist that, in the judgement of the Emergency Coordinator, warrant the declaration of a Site Area Emergency.	SAE17
18. Tech. Specs/Plant Status Changes	
A. Unit shutdown initiated to comply with certain T/S LCO's.	UE3, UE4, UE5, UE7, UE8
B. Exceeding any T/S Safety Limit	UE4 Tech. Spec 2.1 and 6.7.1
C. Manual or automatic ECCS actuation with discharge to the vessel.	UE1
D. Liquid Release that exceeds T/S limits for > 15 mins.	UE2
E. Gaseous Release that exceeds T/S limits for > 15 mins.	UE2

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CROSS REFERENCE
ATTACHMENTS TO EVENTS
SECTION iii

ATTACHMENT	EVENT/INITIATING CONDITION
1	1A, 1B, 1F, 2A, 2B, 5A, 7A, 7B, 7D, 7E, 8A, 9A, 10A, 10B, 12A, 12D, 12G, 12J, 12M, 13A, 13D, 13H, 14A, 15A, 16A, 16B, 16C, 17A, 18A (1,2,3,4,5), 18B, 18C, 18D, 18E
2	1C, 1G, 1H, 1I, 3A, 4A, 5B, 5C, 5E, 7C, 7F, 8B, 9B, 9E, 10C, 11A, 12B, 12E, 12H, 12K, 12N, 13B, 13E, 13F, 13I, 14B, 16D, 16E, 17B
3	1D, 1E, 1J, 1K, 3B, 4B, 5D, 5F, 7G, 8C, 9C, 9F, 10D, 11B, 12C, 12F, 12I, 12L, 12O, 13C, 13G, 13J, 14C, 16F, 17C
4	3C, 4C, 6, 7H, 9D, 12P, 13K, 14D, 16G
10	7I, 7L, 7M
11	7I, 7K, 16H
12	1K, 7N (2,4,6), 8D, 10E, 15B, 17D, 18F, 18G, 18H, 18I, 18K
14	1L, 3D, 4D, 7N (1,3,5), 7O, 7P, 15C, 17E, 18L, 18M, 18N, 18O, 18P, 18Q, 18R
15	17F,
16	8E, 8F
17	15D, 15E
18	7J
19	16I
20	18S
21	17G
22	18T, 18U, 18V, 18W, 18X

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SECTION 1

PRIMARY LEAKAGE / SG TUBE LEAKAGE

PRIMARY LEAK / LOCA

NOTE: Refer to Page 2 for suspected Primary to Secondary Leakage

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. PZR SAFETY/PORV FAILURE TO RESEAT

IF PZR press. < 2200 psig AND POPS not armed

IF RCS press. < 375 psig AND POPS armed

AND

PORV/Safety valve tailpipe temp. Hi OR PRT temp., press., or level increasing

THEN

B. PRIMARY LEAK EXCEEDING T/S LIMITS RESULTING IN UNIT SHUTDOWN

IF Shutdown initiated to comply with Technical Specification Action Statements:

T/S LCO 3.4.6.2 (U/1)
T/S LCO 3.4.7.2 (U/2)

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

C. PRIMARY LEAK RATE >50 GPM

IF One Charging Pump cannot maintain PZR level.

THEN

REFER TO ATTACHMENT 2 ALERT

D. PRIMARY LEAK >50 GPM OUTSIDE CONTAINMENT

IF Unisolable Primary system leak >50 GPM

AND

The leak is discharging outside of the Primary Containment as indicated by any of the following:

1. Increasing Radiation Level Outside of Containment
2. Increasing Sump Level Outside of Containment
3. Increasing Temp. Outside the Containment
4. Direct Observation

THEN

E. PRIMARY LEAK (LOCA) GREATER THAN TOTAL MAKEUP CAPACITY

IF Low / decreasing PZR Level

AND

Maximum charging flow

THEN

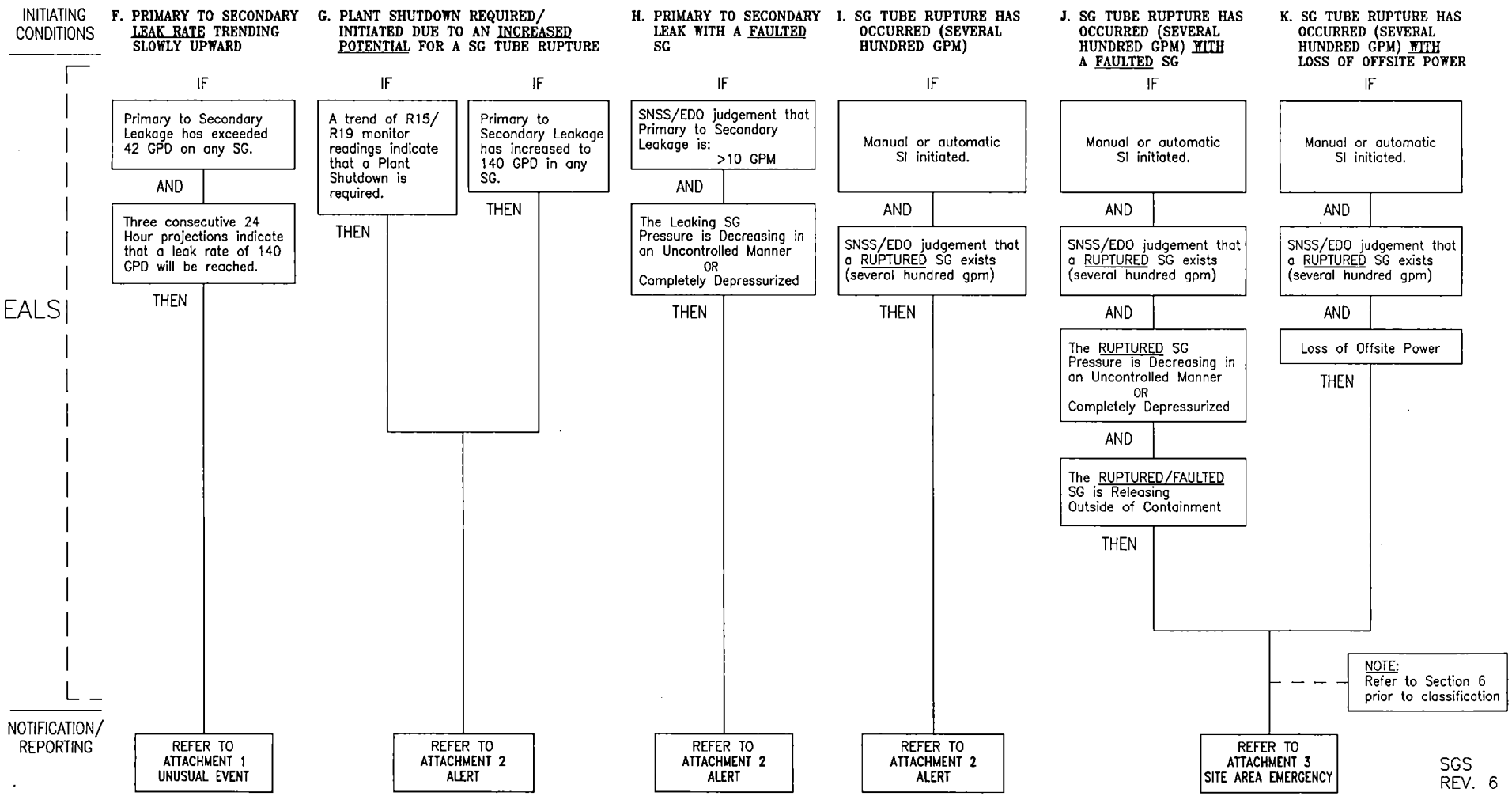
REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

NOTE: Refer to Section 6 prior to classification

SECTION 1

PRIMARY LEAKAGE / SG TUBE LEAKAGE

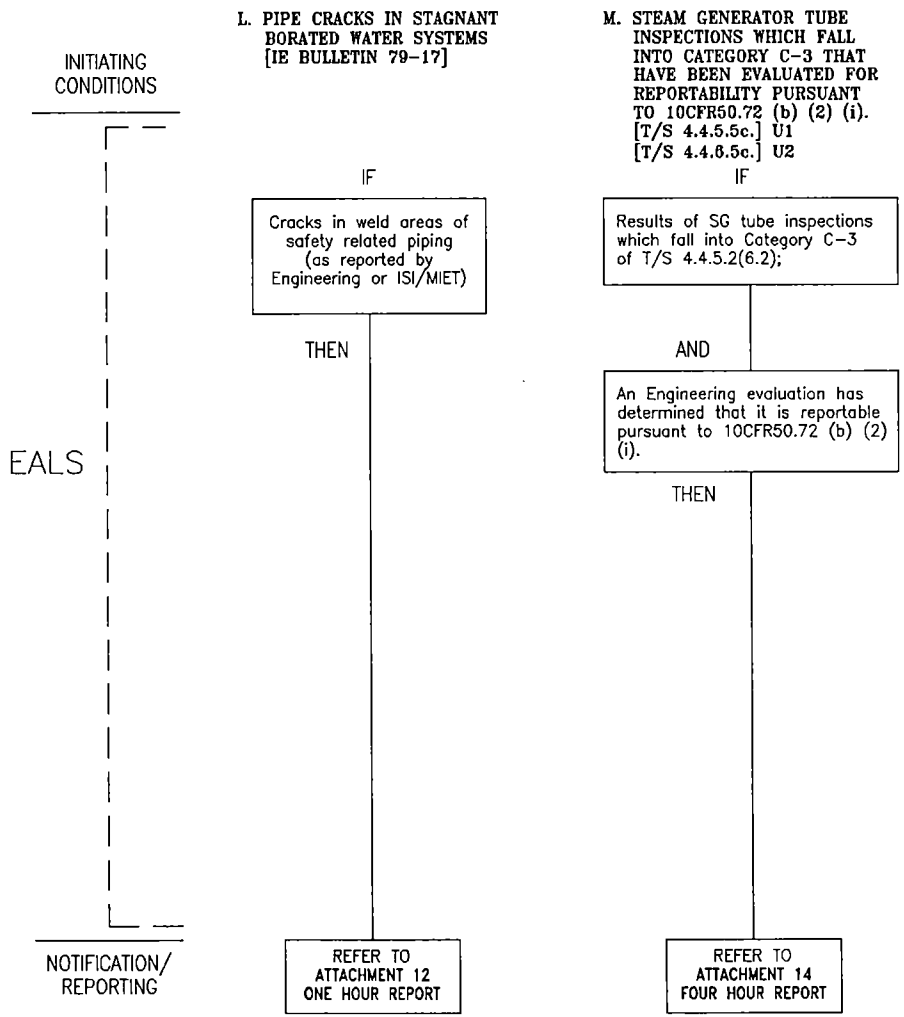
PRIMARY TO SECONDARY LEAKAGE



SECTION 1

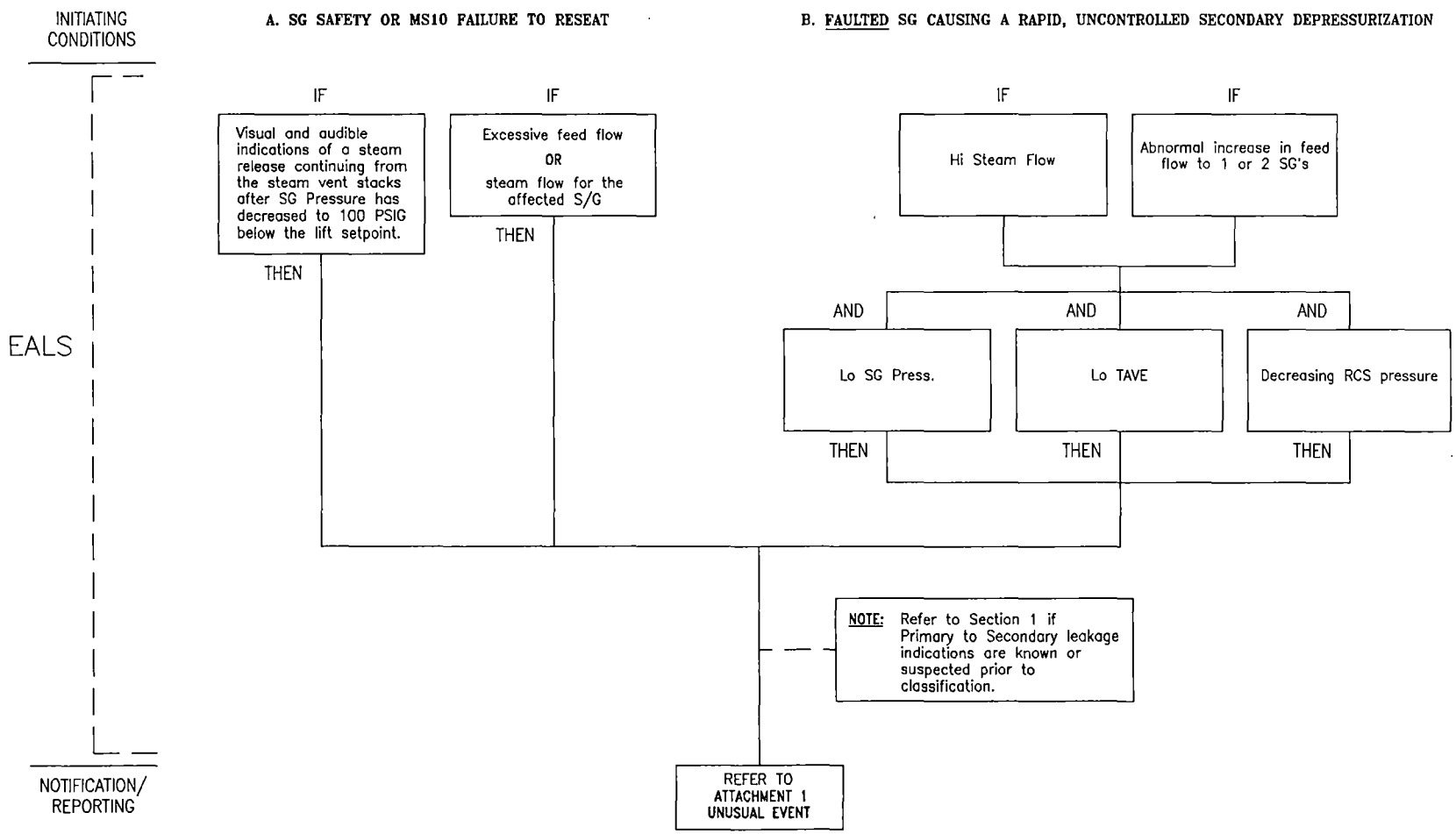
PRIMARY LEAKAGE / SG TUBE LEAKAGE

PRIMARY LEAK



SECTION 2

SECONDARY LEAKAGE



CROSS REFERENCE
ATTACHMENTS TO EVENTS
SECTION iii

ATTACHMENT	EVENT/INITIATING CONDITION
1	1A, 1B, 1E, 2A, 2B, 5A, 7A, 7B, 7D, 7E, 8A, 9A, 10A, 12A, 12D, 12G, 12J, 12M, 13A, 13D, 13H, 14A, 15A, 16A, 16B, 16C, 17A, 18A (1,2,3,4,5), 18B, 18C, 18D, 18E
2	1C, 1F, 1G, 1H, 3A, 4A, 5B, 5C, 5E, 7C, 7F, 8B, 9B, 9E, 10B, 11A, 12B, 12E, 12H, 12K, 12N, 13B, 13E, 13F, 13I, 14B, 16D, 16E, 17B
3	1D, 1I, 1J, 3B, 4B, 5D, 5F, 7G, 8C, 9C, 9F, 10C, 11B, 12C, 12F, 12I, 12L, 12O, 13C, 13G, 13J, 14C, 16F, 17C
4	3C, 4C, 6, 7H, 9D, 12P, 13K, 14D, 16G
10	7I, 7L, 7M
11	7I, 7K, 16H
12	1K, 3D, 7N (2,4,6), 8D, 10D, 15B, 17D, 18F, 18G, 18H, 18I, 18J, 18K
14	3E, 4D, 7N (1,3,5), 7O, 7P, 15C, 17E, 18L, 18M, 18N, 18O
15	17F, 17G
16	8E, 8F
17	15D, 15E
18	7J
20	1L, 18P, 18Q, 18R, 18S
21	17H
22	18T, 18U, 18V, 18W, 18X

SECTION 3

FAILURE TO TRIP / RPS PROBLEMS
ANTICIPATED TRANSIENT WITHOUT TRIP (ATWT)

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. FAILURE OF THE RPS TO AUTOMATICALLY INITIATE AND COMPLETE A TRIP WHICH BRINGS THE RX SUBCRITICAL

IF

Receipt of RX Protection logic input on RP4

AND

Automatic Rx Trip did not bring the Rx subcritical

THEN

NOTE: If a Manual Rx Trip did bring the Rx Subcritical, an ALERT shall be declared until the causes and consequences of the ATWT are evaluated.

REFER TO ATTACHMENT 2 ALERT

B. FAILURE OF THE RPS TO AUTOMATICALLY OR BY OPERATOR ACTION TO MANUALLY, INITIATE AND COMPLETE A TRIP WHICH BRINGS THE RX SUBCRITICAL

IF

Receipt of RX Protection logic input on RP4

AND

Automatic Rx Trip did not bring the Rx subcritical

AND

Manual Rx Trip did not bring the Rx subcritical

AND

RCS Boration fails to bring the RX Subcritical

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

C. TRANSIENT REQUIRING OPERATION OF SHUTDOWN SYSTEMS WITH FAILURE TO TRIP, RESULTING IN CORE DAMAGE OR ADDITIONAL FAILURE OF CORE COOLING AND MAKEUP SYSTEMS

IF

Receipt of RX Protection logic input on RP4

AND

Automatic Rx Trip did not bring the Rx subcritical

AND

Manual Rx Trip did not bring the Rx subcritical

AND

RCS Boration fails to bring the RX Subcritical

AND

No flow shown on SI / RHR systems

AND

Pumps not running with SI initiated

THEN

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

SECTION 3

FAILURE TO TRIP / RPS PROBLEMS
REPORTABLE EVENTS

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

D. EVENT / CONDITION THAT ALONE COULD HAVE PREVENTED CERTAIN SAFETY FUNCTIONS [10CFR 50.72 (b)(2)(iii)]

IF

Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to:
Shutdown the reactor and maintain it in a safe shutdown condition

THEN

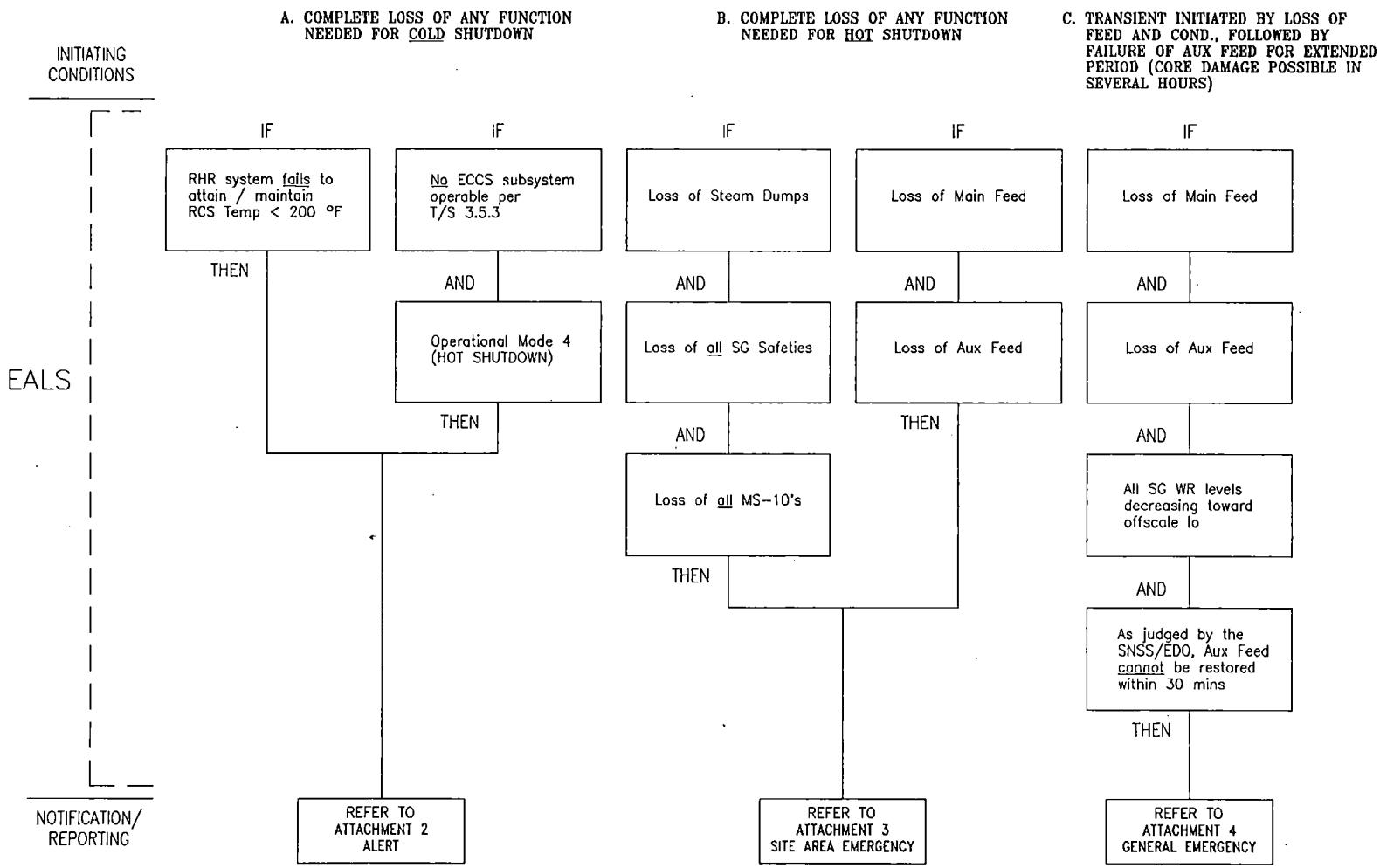
NOTE: Events covered above may include one or more:
procedural errors, equipment failures
AND/OR
discovery of design, analysis, fabrication, construction, and/or procedural inadequacies

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

SECTION 4

LOSS OF DECAY HEAT REMOVAL

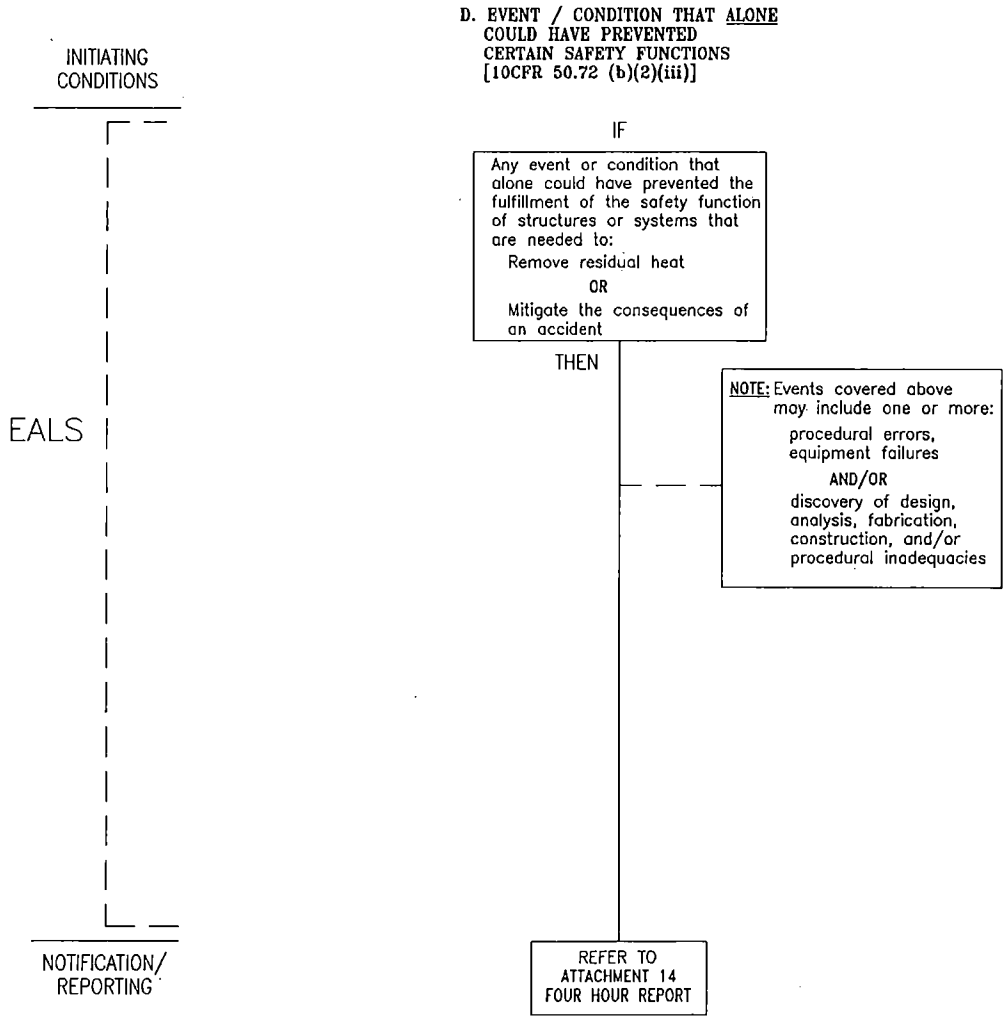
LOSS OR FAILURE OF ENGINEERED SAFETY FEATURES (ESF)



SECTION 4

LOSS OF DECAY HEAT REMOVAL

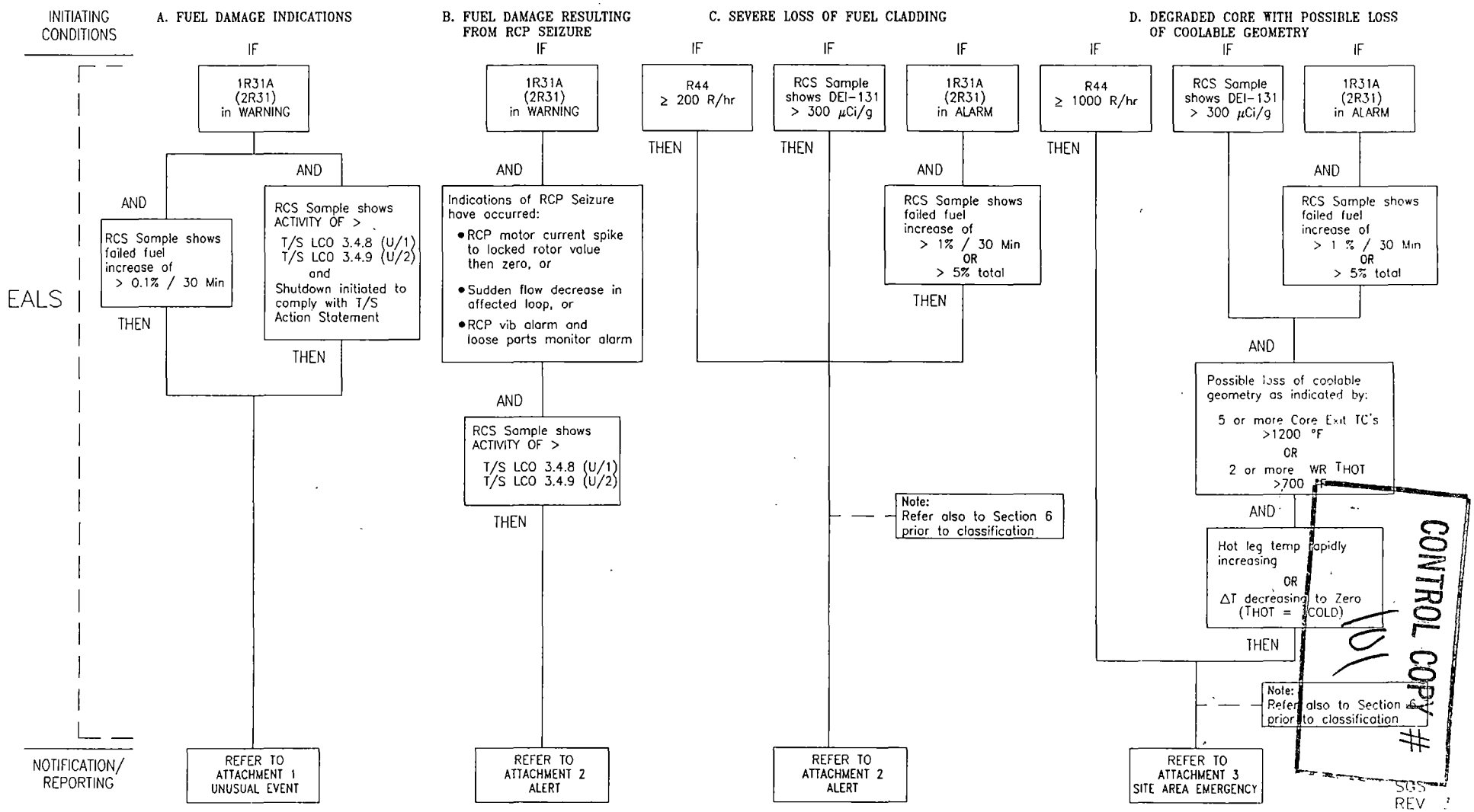
LOSS OR FAILURE OF ENGINEERED SAFETY FEATURES (ESF)



SECTION 5

FUEL DAMAGE / DEGRADED CORE

NOTE: When SNSS/EDO judgement indicates probable Failed Fuel, completion of RCS sample analysis should not restrict / delay classification of the emergency



SECTION 5

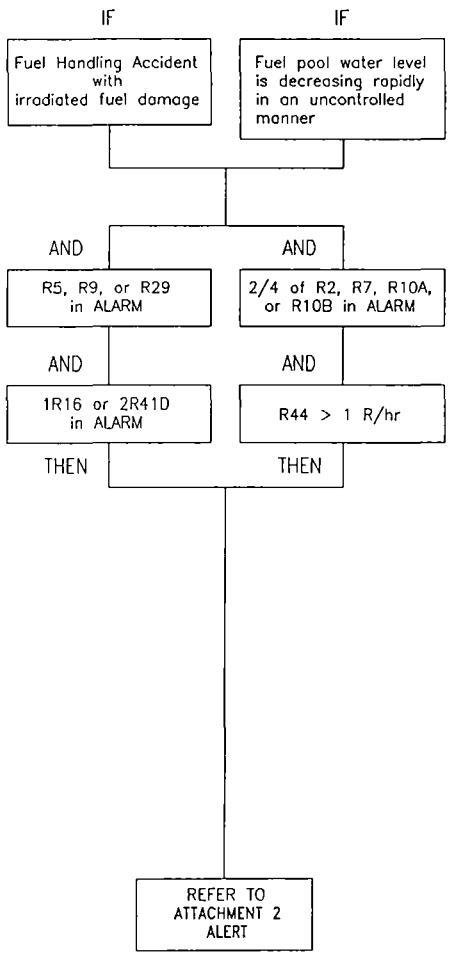
FUEL DAMAGE / DEGRADED CORE
IRRADIATED FUEL DAMAGE

INITIATING CONDITIONS

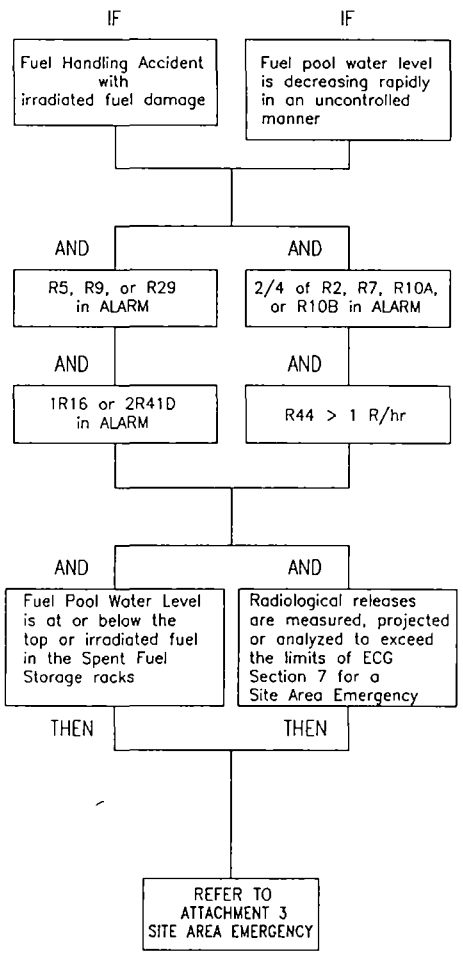
EALS

NOTIFICATION/ REPORTING

E. FUEL HANDLING ACCIDENT WITH RADIOLOGICAL RELEASE TO FHB OR CONTAINMENT FROM IRRADIATED FUEL



F. MAJOR IRRADIATED FUEL DAMAGE WITH RADIOLOGICAL RELEASE EXCEEDING (OR PROJECTED TO EXCEED) THE THRESHOLD DOSE RATES AT THE MEA FOR A SITE AREA EMERGENCY



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SECTION 6

FISSION PRODUCT BOUNDARY FAILURES

NOTE: The following conditions / EALS indicate Failure of a fission product boundary. Any two boundary Failures with a potential loss of the third boundary represents a GENERAL EMERGENCY condition. Monitor for these conditions after any single boundary Failure.

INITIATING CONDITIONS

EALS

A. SEVERE LOSS OF FUEL CLADDING

1. RCS ANALYSIS SHOWS FAILED FUEL

IF

RCS Analysis shows failed fuel increase:
> 1% / 30 min
OR
> 5% total
OR
DEI-131
> 300 μCi/g

2. CONTAINMENT HIGH RADIATION

IF

R44
≥ 200 R/hr

3. INADEQUATE CORE COOLING CONDITIONS

IF

5 or more Core Exit TC's
> 1200 °F
OR
2 or more WR THOT
>700 °F

AND

THOT rapidly increasing
OR
ΔT decreasing to zero
(THOT = TCOLD)

4. ENGINEERING ANALYSIS

IF

Engineering analysis indicates that a degraded core condition exits
(as determined by Technical Support Staff)

B. LOSS OF PRIMARY COOLANT

1. CONT. RADIATION INDICATIONS OF LOCA

IF

R44
≥ 20 R/hr

AND

2/4 of:
R2
R7
R10A
R10B
in WARNING
OR
ALARM

2. RCS / CONT. INDICATIONS OF A LOSS OF PRIMARY COOLANT

IF

LOCA or SGTR as indicated by any of the following:

(A) PZR level decreasing with max charging flow.
OR
(B) 2/3 Cont. Press > 4 psig and Accumulator discharge. (modes 1,2,3)
OR
(C) Cont. sump level > 46% with no indications of a faulted SG inside the Cont. and 2/5 CFCU are alarming.
OR
(D) Cont. sump level > 46% with no indications of a faulted SG inside the Cont. and 2/3 Cont. press are > 4 psig.

3. INADEQUATE RCS SUBCOOLING

IF

Inadequate RCS subcooling

(P250, SPDS, or manual calculation; modes 1,2,3)

C. CONTAINMENT FAILURE

1. CONTAINMENT BREACHED OR BYPASSED

IF

Any breach or bypass of Containment as indicated by:

(A) Significant rise in airborne activity in area of concern
OR
(B) Significant and immediate drop in Cont. Press. when pressure is abnormally high
OR
(C) Unisolable primary system leakage outside of Containment as determined by any one of the following:

1. Increasing Rad Level Outside Containment
2. Increasing Sump Level Outside Containment
3. Increasing Temperature Outside Containment
4. Direct Observation

2. PRIMARY TO SECONDARY LEAK WITH A FAULTED SG

IF

Unisolable faulted SG

(break outside Containment)

AND

SNSS/EDO judgement that Primary to Secondary Leak is:
> 10 GPM

3. CONTAINMENT FAILURE IMMINENT

IF

Cont. failure imminent as indicated by any of the following:

(A) Cont. H2 > 4%
OR
(B) 2/4 Cont. Press. > 47 psig and increasing.
OR
(C) 2/4 Cont. Press > 15 psig and increasing with NO Cont. Spray and < 5 CFCU available
OR
(D) 2/4 Cont. Press > 15 psig and increasing with only ONE Cont. Spray and < 3 CFCU available.

A B C

Any Two Fission Product Boundaries have failed:
A and B, OR A and C, OR B and C

AND

EC judgement that a Potential Exists to lose the Third Boundary

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

NOTIFICATION/ REPORTING

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SECTION 7

RADIOLOGICAL RELEASES / OCCURRENCES

NOTE: Action levels listed are for valid RMS channel indications. The validity of the indication should be confirmed by sample analysis or other means as necessary.

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. CONTAMINATED INJURED PERSON TRANSPORTED FROM THE SITE TO AN OFFSITE MEDICAL FACILITY

IF

Transportation of a contaminated individual from the site to an offsite medical facility

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. LOSS, THEFT OR DIVERSION OF ANY SPECIAL NUCLEAR MATERIAL (SNM) ONSITE

IF

Any loss, theft or diversion of any SNM (known or suspected) at this facility

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

Note:
Refer to Section 16 for escalating conditions of security related events.

C. INCREASE IN MEASURED OR CALCULATED DOSE RATES (MR/HR) OR AIRBORNE ACTIVITY LEVELS BY A FACTOR OF > 1000 TIMES (INDICATION OF DEGRADATION IN CONTROL OF RADIOACTIVE MATERIALS)

IF

Dose Rates or Airborne Activity Levels have unexpectedly increased > 1000 times normal (measured or calculated) by any of the following:

Installed or portable radiation monitors

OR

(Unit 1) increase of analog strip chart readings over 20 mins

OR

(Unit 2) increase trend on rad monitor computer

AND

In the judgement of the SNSS/EDO, a loss of control of radioactive materials has occurred.

THEN

REFER TO ATTACHMENT 2 ALERT

SECTION 7 RADIOLOGICAL RELEASES / OCCURRENCES

NOTE: Action levels listed are for valid RMS channel indications AND/OR confirmed sample analysis.

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

D. LIQUID RELEASE THAT EXCEEDS T/S LIMITS FOR ≥ 15 MINS.

IF

Valid RMS ALARM on any of the following:
R13
R18
R19
or
2R37

AND

Confirmed analysis of Liquid waste effluent exceeding T/S limits.

AND

Release has lasted or is expected to last for ≥ 15 mins.

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

E. GASEOUS RELEASE THAT EXCEEDS T/S LIMITS.

IF

Indication of a total plant release rate (summation of Unit 1 and Unit 2 average values) that equals or exceeds:

≥ 2.42E+05 μCi/sec NG (per OP-AB.RAD-0001 or SSCL)

OR

≥ 2.1E+01 μCi/sec I-131 (per vent sample)

AND

Release has lasted or is expected to last for ≥ 15 mins.

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

F. GASEOUS RELEASE THAT EXCEEDS TEN TIMES T/S LIMITS.

IF

Indication of a total plant release rate (summation of Unit 1 and Unit 2 average values) that equals or exceeds:

≥ 2.42E+06 μCi/sec NG (per OP-AB.RAD-0001 or SSCL)

OR

≥ 2.1E+02 μCi/sec I-131 (per vent sample)

AND

Release has lasted or is expected to last for ≥ 15 mins.

THEN

REFER TO ATTACHMENT 2 ALERT

SECTION 7

RADIOLOGICAL RELEASES / OCCURRENCES

NOTE: A ion levels listed are for valid RMS channel indications. The validity of the indications should be confirmed by sample analysis or other means as necessary.
TEDE = Total Effective Dose Equivalent
CDE = Committed Dose Equivalent

INITIATING CONDITIONS

ALS

G. DOSE RATE AT MINIMUM EXCLUSION AREA (MEA-0.79 MILES FROM AFFECTED UNIT) GREATER THAN OR EQUAL TO 500 mR/hr WHOLE BODY (WB) OR 2500 mR/hr THYROID

IF

Field team at or beyond the MEA measures:

Dose Rates

≥ 50 mR/hr for ≥ 30 min
OR
≥ 500 mR/hr for ≥ 3 min

OR

Thyroid Commitment Dose Rates (I-131 concentrations)

≥ 250 mR/hr for ≥ 30 min (1.0E-07 μCi/cc)
OR
≥ 2500 mR/hr for ≥ 3 min (1.0E-06 μCi/cc)

THEN

IF

Dose assessment using actual meteorological data has projected that at or beyond the MEA

TEDE Rate

≥ 500 mR/hr for ≥ 3 min

OR

Thyroid CDE Rate

≥ 2500 mR/hr for ≥ 3 min

NOTE: Thyroid CDE Rate should only be used for classification if it is based on actual measured values and not on the default Noble Gas to Iodine ratio.

THEN

IF

All of the following:

1. Field team measurements are not available at or beyond the MEA
AND
2. Calculation of TEDE and/or Thyroid CDE based on Emergency Dose Projection procedures have not been performed
AND
3. Analysis of valid RMS readings indicates a total plant release rate that is:

≥ 1.33E+07 μCi/sec NG

OR

≥ 6.94E+03 μCi/sec I-131

As determined by ONE of the following:
A. OP-AB.RAD-0001(Q)
B. RMS 10 or 15 minute average indication which include:

1R45B/C ≥ 2.25E-01 μCi/cc
or
1R45D ≥ 1.33E+02 cpm/m
or
2R41D ≥ 1.33E+07 μCi/sec NG
or
1R43 ≥ 11.7 mR/hr

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

H. DOSE RATE AT MINIMUM EXCLUSION AREA (MEA-0.79 MILES FROM AFFECTED UNIT) GREATER THAN OR EQUAL TO 1000 mR/hr WHOLE BODY (WB) or 5000 mR/hr THYROID

IF

Field team at or beyond the MEA measures:

Dose Rates

≥ 1 R/hr

OR

Thyroid Commitment Dose Rates (I-131 concentrations)

≥ 5 R/hr (2.0E-06 μCi/cc)

THEN

IF

Dose assessment using actual meteorological data has projected that at or beyond the MEA

TEDE Rate

≥ 1 R/hr

OR

Thyroid CDE Rate

≥ 5 R/hr

NOTE: Thyroid CDE Rate should only be used for classification if it is based on actual measured values and not on the default Noble Gas to Iodine ratio.

THEN

IF

All of the following:

1. Field team measurements are not available at or beyond the MEA
AND
2. Calculation of TEDE and/or Thyroid CDE based on Emergency Dose Projection procedures have not been performed
AND
3. Analysis of valid RMS readings indicates a total plant release rate that is:

≥ 2.66E+07 μCi/sec NG

OR

≥ 1.39E+04 μCi/sec I-131

As determined by ONE of the following:
A. OP-AB.RAD-0001(Q)
B. RMS 10 or 15 minute average indication which include:

1R45B/C ≥ 4.50E-01 μCi/cc
or
1R45D ≥ 2.66E+02 cpm/m
or
2R41D ≥ 2.66E+07 μCi/sec NG
or
1R43 ≥ 23.4 mR/hr

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

NOTIFICATION/ REPORTING

SECTION 7

RADIOLOGICAL RELEASES / OCCURRENCES

INITIATING CONDITIONS

EALS

I. LOSS AND INVESTIGATION OF THE LOSS OF SPECIAL NUCLEAR MATERIAL [10CFR73.27 (c)] [10CFR73.71 (a)]

IF

Shipment of Special Nuclear Material (SNM) that is lost

OR

unaccounted for after the estimated time of arrival

THEN

NOTIFICATION/ REPORTING: REFER TO ATTACHMENT 10 ONE HOUR REPORT

IF

Results of a trace investigation of a lost or unaccounted for Special Nuclear Material (SNM) shipment are received

THEN

NOTIFICATION/ REPORTING: REFER TO ATTACHMENT 11 ONE HOUR REPORT

J. ACCIDENT OCCURING DURING TRANSPORTATION OF LICENSED MATERIAL [10CFR71.5 (a)(1)(v)] [49CFR171.15]

IF

Accidents during the transportation of radioactive material which are reported to PSE&G as the shipper that involve (or potentially involve) damage to the cargo.

THEN

NOTE:
Vehicle breakdowns or delays enroute may also be reported by the driver, but are not reportable to the NRC unless an accident is involved (cargo damage).

NOTIFICATION/ REPORTING: REFER TO ATTACHMENT 18 FOUR HOUR REPORT

K. LOST, STOLEN OR MISSING LICENSED MATERIAL >1000 TIMES THE QUANTITY SPECIFIED IN 10CFR20 APPENDIX C IN SUCH CIRCUMSTANCES THAT AN EXPOSURE COULD RESULT TO PERSONS IN UNRESTRICTED AREAS [10CFR20.2202 (A)(1)(i)]

IF

Conditions, as stated above, appear to exist in the judgement of the SNSS/EDO

THEN

NOTE:
Refer to Section 16 for escalating conditions of security related events.

NOTIFICATION/ REPORTING: REFER TO ATTACHMENT 11 ONE HOUR REPORT

L. RECEIPT OF SNM MATERIAL [10CFR73.27 (b)]

IF

Receipt of shipment of strategic Special Nuclear Material (SNM)

OR

Shipment to and receipt of SNM by the consignee

THEN

NOTE:
Contamination level limit for Exclusive Use Shipments is 10 times the above limit. Refer to 10CFR71.87(i)(2) and 71.4 for explanation.

NOTIFICATION/ REPORTING: REFER TO ATTACHMENT 10 ONE HOUR REPORT

M. EXCESSIVE CONTAMINATION AND/OR RADIATION LEVELS ON A PACKAGE [10CFR20.1906D]

IF

Receipt survey indicates that package radiation/ contamination levels equal or exceeds:

1. One of the following:

2,200 dpm/100 cm^2

OR

200 mR/hr on contact

OR

10 mR/hr at 3 feet

THEN

NOTIFICATION/ REPORTING: REFER TO ATTACHMENT 10 ONE HOUR REPORT

RADIOLOGICAL RELEASES / OCCURRENCES

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

N. ANY INCIDENT OR EVENT INVOLVING BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL CAUSING ANY OF THE LISTED RESULTS. [10CFR20.2202]

PERSONNEL OVEREXPOSURE

1. EVENT

IF

Receipt by an individual of:
*TEDE exposure ≥25 Rem or
*LDE exposure ≥75 Rem or
*SDE exposure ≥250 Rem or
release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥5 time the occupational ALI (annual limit of intake) which would usually equate to 25 Rem CEDE*. This does NOT apply to areas where personnel are not normally stationed during routine operations.

THEN

REFER TO ATTACHMENT 12 ONE HOUR REPORT

2. INCIDENT

IF

Receipt by an individual of:
*TEDE exposure ≥5 Rem or
*LDE exposure ≥15 Rem or
*SDE exposure ≥50 Rem or
release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥1 time the occupational ALI (annual limit of intake) which would usually equate to 5 Rem CEDE*. This does NOT apply to areas where personnel are not normally stationed during routine operations.

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

*TEDE = Total Effective Dose Equivalent
*LDE = Lens Dose Equivalent
*SDE = Shallow Dose Equivalent
*CEDE = Committed Effective Dose Equivalent

O. CONTAMINATION OUTSIDE OF THE RADIOLOGICALLY CONTROLLED AREA [10CFR50.72 (b)(2)(vi)]

IF

Discovery of a Contaminated Area OUTSIDE of the RCA with removable activity

AND

Location of Contaminated Area is OUTSIDE of plant structures

AND

Size of Contaminated Area is LARGE (>100 FT^2)

AND

Location of Contaminated Area is such that a contaminated person or material may have left the Protected Area

THEN

REFER TO ATTACHMENT 13 FOUR HOUR REPORT

SECTION 8

NONRADIOACTIVE LEAK / RELEASE
TOXIC OR FLAMMABLE GAS RELEASE

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. THREATENS PLANT PERSONNEL

IF

Observation of an uncontrolled toxic or flammable gas release that threatens plant personnel

OR

Warning from offsite of a release that may travel onsite

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. ENTERING PLANT STRUCTURES

IF

Observation / measurement of an uncontrolled release of gases exceeding toxicity or flammability limits in any of the following plant structures:

Turbine Building
Service Building
Auxiliary Building
Containment
Service Water Intake
Fuel Handling Building

THEN

REFER TO ATTACHMENT 2 ALERT

C. ENTERING VITAL AREAS WHERE SAFE PLANT OPERATION IS COMPROMISED

IF

SNSS/EDO judgement that an uncontrolled toxic or flammable gas release has compromised safe operation of the plant

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

SECTION 8

NONRADIOACTIVE LEAK / RELEASE
SPILLS / DISCHARGES / PIPE CRACKS

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

D. PIPE CRACKS IN STAGNANT BORATED WATER SYSTEMS [IE BULLETIN 79-17]

IF

Cracks in weld areas of safety related piping

(per Engineering or ISI/MIET)

THEN

REFER TO ATTACHMENT 12 ONE HOUR REPORT

E. SPILL/DISCHARGE OF ANY NON-RADIOACTIVE HAZARDOUS SUBSTANCE [10CFR 50.72 (b)(2)(vi)] [N.J.A.C. 7:1E]

1. IN CONTACT WITH GROUNDWATER.

IF

Spill/discharge of an industrial chemical or petroleum product outside of a plant structure within the owner controlled area that has passed through the engineered fill and into the ground water as confirmed by licensing

THEN

2. NO GROUNDWATER CONTACT SUSPECTED.

IF

Spill/discharge of an industrial chemical or petroleum product outside of a plant structure within the owner controlled area that cannot be cleaned up within 1 hour and no contact with groundwater suspected.

THEN

F. SPILL/DISCHARGE OF ANY NON-RADIOACTIVE HAZARDOUS SUBSTANCE INTO OR UPON THE RIVER [10CFR 50.72 (b)(2)(vi)] [N.J.A.C. 7:1E]

IF

Either of the following events occur:

1. Observation of a spill/discharge of an industrial chemical or petroleum product from on-site into the Delaware River or into a storm drain

OR

2. Observation of oil slick on Delaware River which may have originated from Artificial Island

THEN

NOTE:
Contact licensing per ECG attachment 9 for guidance concerning reportability as necessary

NOTE:
This event may require immediate (15 minute) notifications. Do not delay implementation of Attachment 16.

REFER TO ATTACHMENT 16 SPILL/DISCHARGE REPORTING

SECTION 9

ELECTRICAL / POWER FAILURES

AC POWER

NOTE: See Page 3 for DC Power Failures

INITIATING CONDITIONS

EALS

A. LOSS OF ONSITE A.C. POWER CAPABILITY THAT REQUIRES UNIT SHUTDOWN

IF

Shutdown initiated to comply with Technical Specification Action Statement:

(T/S LCO 3.8.1.1)

THEN

B. LOSS OF ALL OFFSITE POWER

IF

Loss of ALL 500KV, 13KV, and 4KV group buses

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

C. LOSS OF ONSITE POWER CAPABILITY.

IF

Unit in modes 5, 6 or defueled

AND

Less then 2 Vital Buses energized

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

D. LOSS OF MOST OFFSITE AND ONSITE VITAL A.C. POWER.

IF

Unit in modes 1, 2, 3 or 4

AND

Less then 2 Vital Buses energized

THEN

IF

Unit in modes 5, 6, or defueled

AND

All Vital Buses are deenergized for >15 minutes

THEN

REFER TO ATTACHMENT 2 ALERT

NOTIFICATION/ REPORTING

SECTION 9

ELECTRICAL / POWER FAILURES

AC POWER

NOTE: See Page 3 for DC Power Failures

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

E. LOSS OF MOST OFFSITE AND ONSITE VITAL AC POWER FOR EXTENDED TIME PERIOD.

IF

Less than two vital buses energized.

AND

15 minutes have elapsed

AND

Unit in modes 1, 2, 3 or 4

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

F. TOTAL LOSS OF ALL VITAL AC POWER.

IF

Loss of normal offsite power to ALL vital buses.

AND

No EDG's have energized their vital buses.

AND

Unit in modes 1, 2, 3 or 4

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

G. TOTAL LOSS OF ALL A.C. POWER WITH TOTAL LOSS OF AUX FEED CAPABILITY FOR SEVERAL HOURS.

IF

Loss of normal offsite power to ALL vital buses.

AND

No EDG's have energized their 4KV vital buses.

AND

Restoration of power to any 4KV Vital Buses is not probable for at least two hours

AND

NO Aux Feed flow is probable for at least two hours

AND

Unit in modes 1, 2, 3 or 4

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

ELECTRICAL / POWER FAILURES
DC POWER

NOTE: Prior to classification, refer to Pages 1 & 2, for losses of AC Power that may be associated with these events.

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

H. LOSS OF ALL ONSITE DC POWER

IF

Loss of all 125 VDC Buses

AND

Loss of all 28 VDC Buses

THEN

REFER TO ATTACHMENT 2 ALERT

I. LOSS OF ALL ONSITE DC POWER FOR > 15 MINS.

IF

Loss of all 125 VDC Buses

AND

Loss of all 28 VDC Buses

AND

DC Power cannot be restored for > 15 mins

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

SECTION 10 LOSS OF INSTRUMENTATION/ANNUNCIATION/COMMUNICATIONS

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. INDICATIONS OR ALARMS ON PROCESS OR EFFLUENT PARAMETERS NOT FUNCTIONAL IN CONTROL ROOM.

IF

Indications or alarms on parameters are not functional in Control Room

NOTE: Refer to Section 10E If shutdown not required.

AND

Extent of lost function requires plant shutdown

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. UNPLANNED LOSS OF MOST OR ALL ANNUNCIATION OR INDICATION IN THE CONTROL ROOM FOR GREATER THAN 15 MINUTES.

IF

Affected Unit in MODE 1,2,3,4

AND

Unplanned Loss of > 75% of Control Room OHAs for ≥ 15 minutes.

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

C. UNPLANNED LOSS OF MOST OR ALL CONTROL ROOM ANNUNCIATORS AND A SIGNIFICANT TRANSIENT IS IN PROGRESS OR COMPENSATORY INDICATORS ARE UNAVAILABLE.

AND

Alternate Indications are NOT AVAILABLE per AB.ANN-0001(Q)

AND

A significant transient is in progress **

THEN

REFER TO ATTACHMENT 2 ALERT

D. INABILITY TO MONITOR A SIGNIFICANT TRANSIENT IN PROGRESS.

IF

Affected Unit in MODE 1,2,3,4

AND

Loss of > 75% of Control Room OHAs

AND

A significant transient is in progress **

AND

Control Room Indications are unavailable to monitor ANY one of the following:

- RCS/Core Status
- Reactivity Control
- ECCS
- Secondary Systems (SGs/AFW)
- Containment Parameters

AND

Alternate Indications are NOT AVAILABLE per AB.ANN-0001(Q)

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

** **NOTE: A Significant Transient is based on EC judgement but includes as a minimum any one of the following: RX TRIP, LOAD REJECTION > 25% POWER, ECCS INJECTION, THERMAL POWER OSCILLATIONS > 10% .**

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

E. MAJOR LOSS OF EMERGENCY ASSESSMENT CAPABILITY, OFFSITE RESPONSE CAPABILITY, OR COMMUNICATIONS CAPABILITY [10CFR50.72 (b)(1)(v)]

IF

SNSS/EDO determines that an event(s) (excluding a scheduled test or maintenance activity) has occurred that would impair the ability to deal with an accident or emergency such as:

1. Loss of ANY one of the following:
   - Emergency Notification System (ENS) for > 1 Hr. (Not applicable if NRC notifies PSE&G of the loss)
   - Nuclear Emergency Telephone System (NETS) for > 1 Hr.
   - Offsite Sirens (>25%) for > 1 Hr.
   - Use of the TSC or EOF.
   - SPDS for > 24 Hrs. (>2 CFST's Inop)
   - All Meteorological data for > 24 hours.
   - Site access due to Acts of Nature (snow, flood, etc.)
   - Control Room habitability (SCBA's required in CR)
   - All or most (> 75%) OHA's for < 15 minutes in MODES 1,2,3,4.
   - All or most (> 75%) OHA's in MODE 5, 6, Defueled.
   - All plant vent Radiation monitors. (R16s, R41s, R45s)
   - P250 or Aux Annunciator system for >24 Hrs.

   OR

2. Concurrent loss of multiple Accident or Emergency plant indicators or monitors which significantly impairs assessment capabilities

THEN

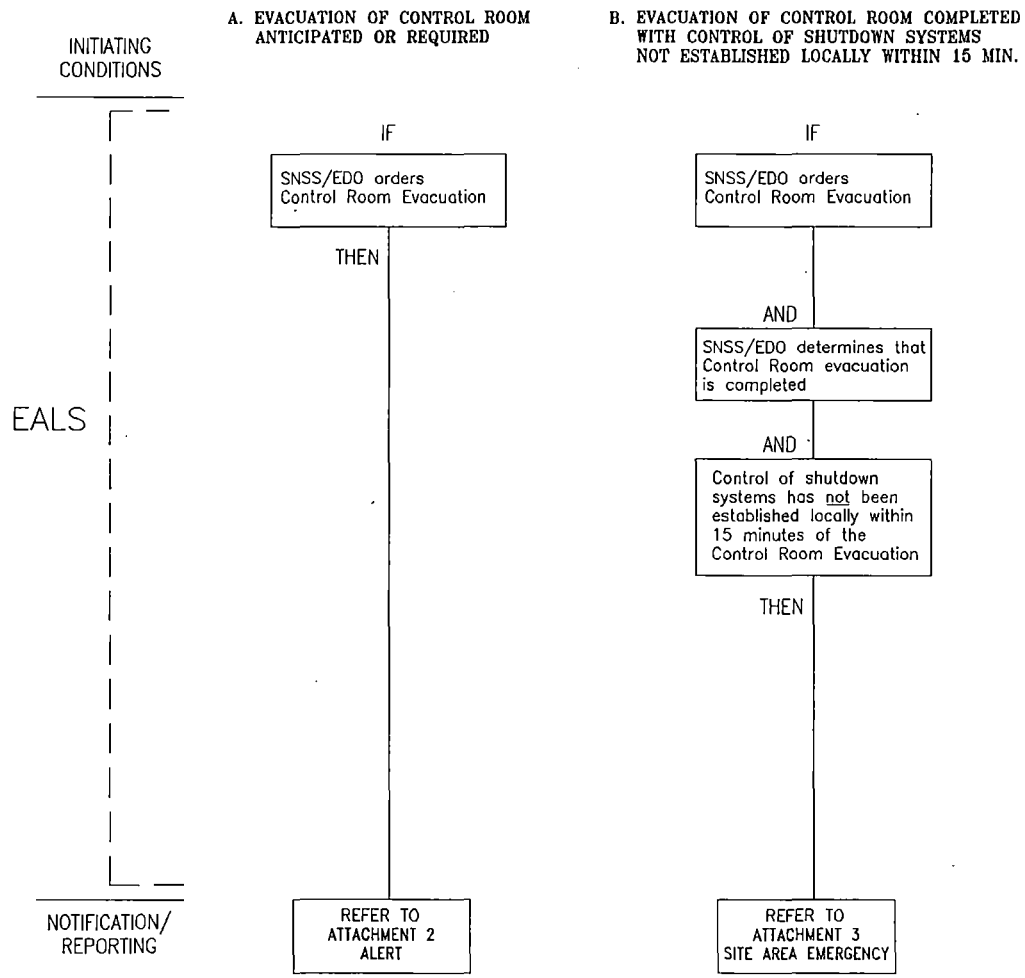
NOTE: Refer to EAL 10A if extent of loss requres shutdown

NOTE: Refer to EAL's 10B or 10C if loss of OHA's for ≥ 15 min.

NOTE: Refer to ECG Section 11 if Control Room is evacuated

REFER TO ATTACHMENT 12 ONE HOUR REPORT

SECTION 11 CONTROL ROOM EVACUATION



ACTS OF NATURE / EARTHQUAKE

EARTHQUAKE / SEISMIC EVENT FELT IN-PLANT OR DETECTED ON STATION INSTRUMENTATION

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

NOTE:
An approximate relationship between acceleration and magnitude is as follows:
0.02g ~ 4.5 Richter
0.1g ~ 5.5 Richter
0.2g ~ 6.5 Richter

NOTE:
National Earthquake Center can be contacted for further information (303) 273-8500

A. INSTRUMENT DETECTED OR FELT IN PLANT

IF
A Seismic Event was felt in the Plant
THEN

IF
Seismic monitor Panel (Unit 1 CR) alarms
AND
Seismic Monitor is recording
AND
Seismic disturbance level is: ≥ 0.02g
THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. OPERATING BASIS

IF
Seismic monitor Panel (Unit 1 CR) alarms
AND
Seismic Monitor is recording
AND
Seismic disturbance level is: ≥ 0.1g
THEN

REFER TO ATTACHMENT 2 ALERT

C. DESIGN BASIS

IF
Seismic monitor Panel (Unit 1 CR) alarms
AND
Seismic Monitor is recording
AND
Seismic disturbance level is: ≥ 0.2g
THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

SECTION 12
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FLOOD / WATER LEVEL IN RIVER HIGH

INITIATING CONDITIONS

EALS

NOTE:
National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions.
(302) 573-6142 (Wilmington)
(609) 261-6604 (Mount Holly)
(609) 261-6602 (Mount Holly)

NOTIFICATION/ REPORTING

D. WATER LEVEL IN RIVER HIGH

IF

Tide level recorder shows: ≥ 97.5 feet

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

E. NEAR DESIGN BASIS

IF

Tide level recorder shows: ≥ 99.5 feet

THEN

REFER TO ATTACHMENT 2 ALERT

F. GREATER THAN DESIGN BASIS

IF

River level has increased such that in the judgement of the SNSS/EDO, flooding has compromised the function of a required safety system.

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

SECTION 12
PAGE INDEX

SECTION 12 ACTS OF NATURE / LOW RIVER LEVEL

LOW RIVER LEVEL

WATER LEVEL IN RIVER LOW

INITIATING CONDITIONS	G. WATER LEVEL IN RIVER LOW	H. NEAR DESIGN BASIS	I. LOWER THAN DESIGN BASIS
EALS	IF Tide level recorder shows: ≤ 83.0 feet THEN	IF Tide level recorder shows: ≤ 81.0 feet THEN	IF Tide level recorder shows: ≤ 78.4 feet THEN
NOTIFICATION/ REPORTING	REFER TO ATTACHMENT 1 UNUSUAL EVENT	REFER TO ATTACHMENT 2 ALERT	REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

NOTE:
National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions.
(302) 573-6142 (Wilmington)
(609) 261-6604 (Mount Holly)
(609) 261-6602 (Mount Holly)

SECTION 12
PAGE INDEX

ACTS OF NATURE / HURRICANE

HURRICANE / UNUSUAL WIND INDICATED BY MET TOWER INSTRUMENTATION

INITIATING CONDITIONS

EALS

J. UNUSUAL WIND

IF

Wind speed as indicated from <u>any</u> elevation of Met Tower:

Sustained winds ≥ 70 mph

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

K. NEAR DESIGN BASIS

IF

Wind speed as indicated from <u>any</u> elevation of Met Tower:

Sustained winds ≥ 85 mph

THEN

REFER TO ATTACHMENT 2 ALERT

L. GREATER THAN DESIGN BASIS

IF

Wind speed has increased such that in the judgement of the SNSS/EDO, the function of a required safety system has been compromised

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

NOTIFICATION/ REPORTING

NOTE:
National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions.
(302) 573-6142 (Wilmington)
(609) 261-6604 (Mount Holly)
(609) 261-6602 (Mount Holly)

NOTE:
The Wind Speed indication from the Met Tower instrumentation is Full Scale at 100 mph.

SECTION 12
PAGE INDEX

ACTS OF NATURE / TORNADO

TORNADO FUNNEL OBSERVED

INITIATING CONDITIONS

EALS

M. WITHIN MEA

IF

Tornado funnel observed on-site within the Minimum Exclusion Area (MEA)

THEN

N. WITHIN PROTECTED AREA

IF

Funnel observed striking or touching down within the Protected Area.

THEN

O. AFFECTING PLANT STRUCTURES

IF

Tornado has affected any of the following Plant Structures:
- Turbine Building
- Service Building
- Auxiliary Building
- Containment
- Service Water Intake
- RWST, PWST, or AFWST
- Fuel Handling Building

THEN

NOTIFICATION/ REPORTING

REFER TO ATTACHMENT 1 UNUSUAL EVENT

REFER TO ATTACHMENT 2 ALERT

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

NOTE:
National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions.
(302) 573-6142 (Wilmington)
(609) 261-6604 (Mount Holly)
(609) 261-6602 (Mount Holly)

SECTION 12
PAGE INDEX

SECTION 12 ACTS OF NATURE / MAJOR EVENT

MAJOR EVENT

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

P. MAJOR EVENT SUBSTANTIALLY BEYOND DESIGN BASIS

IF

ANY earthquake or severe weather conditions exist that in the judgement of the SNSS/EDO will result in the Emergency Action Levels contained in Section 6, 7H, or 9F.

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

NOTE:
National Weather Service can be contacted for further information about existing or projected Adverse Weather Conditions.
(302) 573-6142 (Wilmington)
(609) 261-6604 (Mount Holly)
(609) 261-6602 (Mount Holly)

SECTION 12
PAGE INDEX

SITE HAZARDS / AIRCRAFT

AIRCRAFT UNUSUAL ACTIVITY OVER FACILITY OR CRASH ON FACILITY

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. OVER FACILITY OR CRASH IN MEA

IF
Unusual aircraft activity over the facility

THEN

IF
Aircraft crash within the Minimum Exclusion Area (MEA)

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. CRASH WITHIN PROTECTED AREA

IF
Aircraft crash is within the Protected Area

THEN

REFER TO ATTACHMENT 2 ALERT

C. CRASH AFFECTING PLANT STRUCTURE

IF
Aircraft crash has affected any of the following Plant Structures by impact or fire:
- Turbine Building
- Service Building
- Aux. Building
- Containment
- Service Water Intake
- RWST, PWST or AFWST
- Fuel Handling Building

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

SECTION 13 PAGE INDEX

TURBINE ROTATING COMPONENT FAILURE

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

D. COMPONENT FAILURE

IF

Turbine trip

AND

Indication of a rotating component failure such as turbine blading.

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

E. WITH CASING PENETRATION

IF

Turbine trip

AND

Indication of a rotating component failure such as turbine blading.

AND

Observation of penetrations through the outer casing

THEN

REFER TO ATTACHMENT 2 ALERT

SECTION 13
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SITE HAZARDS / MISSILES

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

MISSILE IMPACTS ON SITE FROM ANY SOURCE

F. WITHIN PROTECTED AREA

IF

Any missile impacts within the Protected Area of the Facility from any source

THEN

REFER TO ATTACHMENT 2 ALERT

G. DAMAGE TO PLANT STRUCTURE

IF

Any missile impacts within the Protected Area of the Facility from any source

AND

Causes severe damage to any of the following Plant Structures:

- Turbine Building
- Service Building
- Aux. Building
- Containment
- Service Water Intake
- RWST, PWST or AFWST
- Fuel Handling Building

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

SECTION 13
PAGE INDEX

SITE HAZARDS / EXPLOSIONS

UNPLANNED EXPLOSION

INITIATING CONDITIONS

EALS

H. UNPLANNED EXPLOSION DAMAGING PLANT STRUCTURES OR EQUIPMENT

IF

Explosion within Protected Area resulting in visible damage to plant equipment or safety related structures

THEN

NOTE:
Electrical failure (shorts, grounds, arcing, etc.) should not be considered an explosion, however ECG Section 14 (Fire) should be reviewed.

REFER TO **ATTACHMENT 1 UNUSUAL EVENT**

I. KNOWN EXPLOSION DAMAGE TO FACILITY AFFECTING PLANT OPERATION

IF

Explosion has directly caused any of the following:
- damage to more than one safety system
- mode change
- power reduction
- hampers performance of site personnel

THEN

NOTE:
Electrical failure (shorts, grounds, arcing, etc.) should not be considered an explosion, however ECG Section 14 (Fire) should be reviewed.

REFER TO **ATTACHMENT 2 ALERT**

J. EXPLOSION CAUSING SEVERE DAMAGE TO SAFETY SYSTEMS WITH PLANT NOT IN COLD SHUTDOWN

IF

Explosion has damaged more than one safety system

AND

In the judgement of the SNSS/EDO, the affected safety systems are unable to perform their intended safety functions as a direct result of the explosion

AND

Plant is in Mode 1, 2, 3 or 4

THEN

REFER TO **ATTACHMENT 3 SITE AREA EMERGENCY**

NOTIFICATION/ REPORTING

SECTION 13 PAGE INDEX

SITE HAZARDS / MAJOR EVENT

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

K. MAJOR EVENT, SUBSTANTIALLY BEYOND DESIGN BASIS

IF

ANY event (aircraft crash, missile impact, explosion, etc.) that in the judgement of the SNSS/EDO will result in the Emergency Action Levels contained in Section 6, 7H or 9G.

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

SECTION 13
PAGE INDEX

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SECTION 14

FIRE

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. FIRE IN PLANT LASTING > 10 MINS OR FIRE AFFECTING PLANT OPERATIONS

IF

Fire within a permanent plant structure lasting > 10 minutes

OR

Fire affects plant operation by causing any one of the following:

- mode change
- power reduction
- hampers performance of site personnel

OR

Fire that has damaged a single safety system (train, loop, component)

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. FIRE POTENTIALLY COMPROMISING THE FUNCTION OF SAFETY SYSTEMS

IF

Fire, that in the judgement of the SNSS/EDO, has the potential to damage more than one safety system

OR

has damaged more than one safety system

THEN

REFER TO ATTACHMENT 2 ALERT

C. FIRE COMPROMISING THE FUNCTIONS OF SAFETY SYSTEMS

IF

Fire has damaged more than one safety system

AND

In the judgement of the SNSS/EDO, the affected safety systems are unable to perform their intended safety functions as a direct result of the fire

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

D. ANY MAJOR FIRE (SUBSTANTIALLY BEYOND DESIGN BASIS) WHICH COULD CAUSE MASSIVE COMMON DAMAGE TO SAFETY SYSTEMS

IF

Fire exceeding the design basis or the Fire Protection System

AND

Unable to terminate by additional Fire Company Support

AND

In the judgement of the SNSS/EDO, will result in EAL's of Section 6, Section 7H or Section 9F

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

PERSONNEL EMERGENCIES
INJURIES / OVEREXPOSURES

INITIATING CONDITIONS

A. CONTAMINATED INJURED PERSON

EALS

IF

A contaminated individual is being transported to an offsite medical facility

THEN

NOTIFICATION/ REPORTING

REFER TO ATTACHMENT 1 UNUSUAL EVENT

PERSONNEL EMERGENCIES

INJURIES / OVEREXPOSURES

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

B. ANY SIGNIFICANT PERSONNEL OVEREXPOSURE [10CFR20.2202]

IF

Receipt by an individual of:
*TEDE exposure ≥25 Rem or
*LDE exposure ≥75 Rem or
*SDE exposure ≥250 Rem or
release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥5 times the occupat-ional ALI (annual limit of intake) which would usually equate to 25 Rem CEDE*. This does not apply to areas where personnel are not normally stationed during routine operations.

THEN

REFER TO ATTACHMENT 12 ONE HOUR REPORT

C. ANY PERSONNEL OVEREXPOSURE [10CFR20.2202]

IF

Receipt by an individual of:
*TEDE exposure ≥5 Rem or
*LDE exposure ≥15 Rem or
*SDE exposure ≥50 Rem or
release of radioactive material inside or outside of a restricted area so that had an individual been present for 24 hours the individual could have received ≥1 times the occupat-ional ALI (annual limit of intake) which would usually equate to 5 Rem CEDE*. This does not apply to areas where personnel are not normally stationed during routine operations.

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

* CEDE = Committed Effective Dose Equivalent
* TEDE = Total Effective Dose Equivalent
* LDE = Lens Dose Equivalent
* SDE = Shallow Dose Equivalent

D. SERIOUS INJURY [10CFR50.72 (b)(2)(vi)]

IF

Any serious injury has occurred on-site, as judged by the Medical Emergency Response Team leader.

THEN

E. FATALITY [10CFR50.72 (b)(2)(vi)]

IF

Any fatality has occurred on-site

THEN

REFER TO ATTACHMENT 17 FOUR HOUR REPORT

SECURITY / FFD

NOTE: Numbers associated with particular EAL'S refer to specific Security Contingency Procedures (SCP).

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. LOSS, THEFT OR DIVERSION OF ANY SPECIAL MATERIAL ON-SITE

IF

Any on-site loss, theft, or diversion of any Special Nuclear Material

THEN

B. SUBSTANTIATED THREAT OR ATTEMPTED ENTRY OR DISCOVERY OF A SUSPECTED DESTRUCTIVE DEVICE OR EVIDENCE OF A MALICIOUS ACT

IF

Any one of the following as reported by Security:

1. Loss or degradation of the physical security system
2. Loss of security computer power.
3. Complete loss of offsite communications.

AND

Any one of the following as reported by Security:

10. Discovery of suspected destructive devices or evidence of malicious acts in a non-vital area

THEN

IF

Any one of the following as reported by Security:

4. Loss or degradation of the security force.
5. Threat against the Station.
7. Internal disturbance.
8. Hostage situation (held off-site).
11. Civil disturbance
13. Tamper Alarm Ann. (if actual tampering has occurred)

THEN

C. SECURITY ALERT

IF

12. Declared Security Alert

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

D. SUBSTANTIATED THREAT OR ATTEMPTED ENTRY OR DISCOVERY OF A SUSPECTED DESTRUCTIVE DEVICE OR EVIDENCE OF A MALICIOUS ACT WITH A SECURITY ALERT DECLARED

IF

12. Declared Security Alert

AND

Any one of the following as reported by Security:

3. Complete loss of offsite communications.
8. Hostage situation (held off-site).
9. Fire, explosion or other catastrophe.
11. Civil disturbance.

THEN

IF

Any one of the following as reported by Security:

6. Discovery of intruder, unarmed and non-violent.
8. Hostage held on-site in non-vital area.
10. Discovery of suspected destructive devices or evidence of malicious acts in a vital area

THEN

E. ONGOING SECURITY COMPROMISE

IF

Any one of the following as reported by Security:

5. Threat against the Station.
9. Fire, explosion or other catastrophe.

AND

10. Discovery of suspected destructive devices or evidence of malicious acts in a non-vital area

THEN

REFER TO ATTACHMENT 2 ALERT

SECURITY / FFD

NOTE: Numbers associated with particular EAL'S refer to specific Security Contingency Procedures (SCP).

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

F. ONGOING SECURITY COMPROMISE WITH IMMINENT LOSS OF PHYSICAL CONTROL OF THE PLANT

IF

6. Discovery of intruder, armed or violent, in non-vital area.

IF

10. Discovery of suspected destructive devices or evidence of malicious acts in a vital area

NOTE: Refer to Section 16E as a minimum

AND

SNSS/EDO judgement that loss of physical control of the plant is imminent

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

G. ONGOING SECURITY COMPROMISE WITH THE LOSS OF PHYSICAL CONTROL OF THE PLANT

IF

6. Discovery of armed or violent intruder in one of the following areas:
   A. Control Room
   B. Hot Shutdown Panel

IF

9. Fire, explosion or other catastrophe

AND

10. Discovery of suspected destructive device in one of the following vital areas
   A. Control Room
   B. Hot Shutdown Panel

NOTE: Refer to Section 16F as a minimum

AND

SNSS/EDO judgement that loss of physical control of the plant has occurred.

THEN

REFER TO ATTACHMENT 4 GENERAL EMERGENCY

SECURITY / FFD
REPORTABLE EVENTS

NOTE: Numbers associated with particular EAL'S refer to specific Security Contingency Procedures (SCP).

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

H. SAFEGUARDS EVENTS THAT ARE DETERMINED TO BE NON-EMERGENCIES BUT ARE REPORTABLE TO THE NRC WITHIN 1 HOUR [10CFR73.71]

IF

14. Any Non-Emergency safeguards event that is reportable in accordance with 10CFR73.71 as determined by Security (SCP-15)

THEN

REFER TO **ATTACHMENT 11 ONE HOUR REPORT**

I. SIGNIFICANT FITNESS FOR DUTY EVENTS. [10CFR26.73(a)]

IF

Any event determined to be reportable by the Medical Review Officer (MRO) or designee i.a.w. PSE&G's Fitness For Duty Program. (NC-NA-AP.ZZ-0042(Q))

AND

The reportable details of the event are made available to the SNSS by the MRO or designee.

THEN

NOTE: The NRC has determined that FFD events shall be reported under section 26.73 of 10CFR rather than 73.71. Only the Medical Review Officer or designee may determine reportability of these events for PSE&G, unless the event has safeguards significance, in which case the determination to report the safeguards aspect is made by Security.

REFER TO **ATTACHMENT 19 24 HOUR REPORT**

PUBLIC INTEREST

CONTROL COPY #
101

PLANT CONDITIONS EXIST THAT, IN THE JUDGEMENT OF THE EMERGENCY COORDINATOR, WARRANT:

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

A. DECLARATION OF AN UNUSUAL EVENT

IF

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate a potential degradation of plant safety

THEN

REFER TO ATTACHMENT 1 UNUSUAL EVENT

B. DECLARATION OF AN ALERT

IF

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate ANY one of the following:

- MORE THAN ONE Safety System is degraded or potentially degraded
- ANY Plant Vital Structure is degraded or potentially degraded
- Conditions exist which meet or exceed criteria for the declaration of an Alert IAW ECG Introduction Section

AND

In the judgement of the Emergency Coordinator, increased monitoring of Safety Functions is required

THEN

REFER TO ATTACHMENT 2 ALERT

C. DECLARATION OF A SITE AREA EMERGENCY

IF

Events are in progress or have occurred which, in the judgement of the Emergency Coordinator, indicate ANY one of the following:

- Conditions exist which have the potential for an uncontrolled Radiological Release, from any source, which could result in a TEDE Rate that is ≥500 mRem/hr at the MEA or beyond
- Containment Atmosphere radioactivity concentration is high enough that, (based on SSCL projection) if Containment fails, it could result in a TEDE Rate that is ≥500 mRem/hr at the MEA or beyond
- Conditions exist which meet or exceed criteria for the declaration of a Site Area Emergency IAW ECG Introduction Section

THEN

REFER TO ATTACHMENT 3 SITE AREA EMERGENCY

PUBLIC INTEREST

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

D. EMERGENCY CONDITIONS DISCOVERED AFTER-THE-FACT

IF

Discovery of an event/condition that had previously occurred, (event was not ongoing at the time of discovery) which exceeded an Emergency Action Level (EAL) but was not declared as an emergency.

AND

There are currently NO adverse consequences in progress as a result of the event.

THEN

REFER TO ATTACHMENT 12 ONE HOUR REPORT

E. MAJOR LOSS OF EMERGENCY ASSESSMENT CAPABILITY, OFFSITE RESPONSE CAPABILITY, OR COMMUNICATIONS CAPABILITY [10CFR50.72 (b)(1)(v)]

IF

SNSS/EDO determines that an event(s) (excluding a scheduled test or maintenance activity) has occurred that would impair the ability to deal with an accident or emergency such as:

1. Loss of ANY one of the following:
   - Emergency Notification System (ENS) for > 1 Hr. (Not applicable if NRC notifies PSE&G of the loss)
   - Nuclear Emergency Telephone System (NETS) for > 1 Hr.
   - Offsite Sirens (>25%) for > 1 Hr.
   - Use of the TSC or EOF.
   - SPDS for > 24 Hrs. (>2 CFST's Inop)
   - All Meteorological data for > 24 hours.
   - Site access due to Acts of Nature (snow, flood, etc.)
   - Control Room habitability (SCBA's required in CR)
   - All or most (> 75%) OHA's for < 15 minutes in MODES 1,2,3,4.
   - All or most (> 75%) OHA's in MODE 5, 6, Defueled.
   - All plant vent Radiation monitors. (R16s, R41s, R45s)
   - P250 or Aux Annunciator system for >24 Hrs.

   OR
2. Concurrent loss of multiple Accident or Emergency plant indicators or monitors which significantly impairs assessment capabilities

THEN

NOTE: Refer to EAL 10A if extent of loss requres shutdown

NOTE: Refer to EAL's 10B or 10C if loss of OHA's for ≥ 15 min.

NOTE: Refer to ECG Section 11 if Control Room is evacuated

REFER TO ATTACHMENT 12 ONE HOUR REPORT

F. UNUSUAL CONDITIONS WARRANTING A NEWS RELEASE OR NOTIFICATION OF GOVERNMENT AGENCIES [10CFR50.72 (b)(2)(vi)]

IF

SNSS/EDO judges that an event or situation has occurred that is related to the health and safety of:

The public

OR

Onsite personnel

OR

Protection of the environment

NOTE: Refer to EAL 7.0 if contamination is discovered outside the RCA

AND

A news release is planned

OR

Notifications to other government agencies has been or will be made.

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

PUBLIC INTEREST

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

G. UNUSUAL OR IMPORTANT ENVIRONMENTAL EVENTS [SGS OPERATING LICENSE, APPENDIX B, SECTION 4.1 ENVIRONMENTAL PROTECTION PLAN]

IF

As judged by SNSS/EDO:

Unusually large fish kill.

THEN

IF

Protected aquatic species impinge on Service Water intake screens (ex.: sea turtle, sturgeon) as reported by Site personnel.

THEN

IF

Any occurrence of an unusual or important event that indicates or could result in significant environmental impact casually related to plant operation. Such as the following:

Excessive bird impaction events.
Onsite plant or animal disease outbreaks.
Mortality or unusual occurrence of any species protected by the Endangered Species Act of 1973.
Increase in nuisance organisms or conditions.

THEN

NOTE:
For unanticipated or emergency discharge of waste water or chemical substances, refer to ECG Section 8.

NOTE:
Final determination of reportability will be made by Environmental Licensing as a result of implementing Attachment 15

REFER TO ATTACHMENT 15 ENVIRONMENTAL PROT. PLAN REPORT

H. UNUSUAL CONDITIONS DIRECTLY AFFECTING LOWER ALLOWAYS CREEK TOWNSHIP (LACT) [PER MEMORANDUM OF UNDERSTANDING]

IF

As judged by SNSS/EDO:

Anticipated unusual movement of equipment or personnel which may significantly affect local traffic patterns.

THEN

IF

As judged by SNSS/EDO:

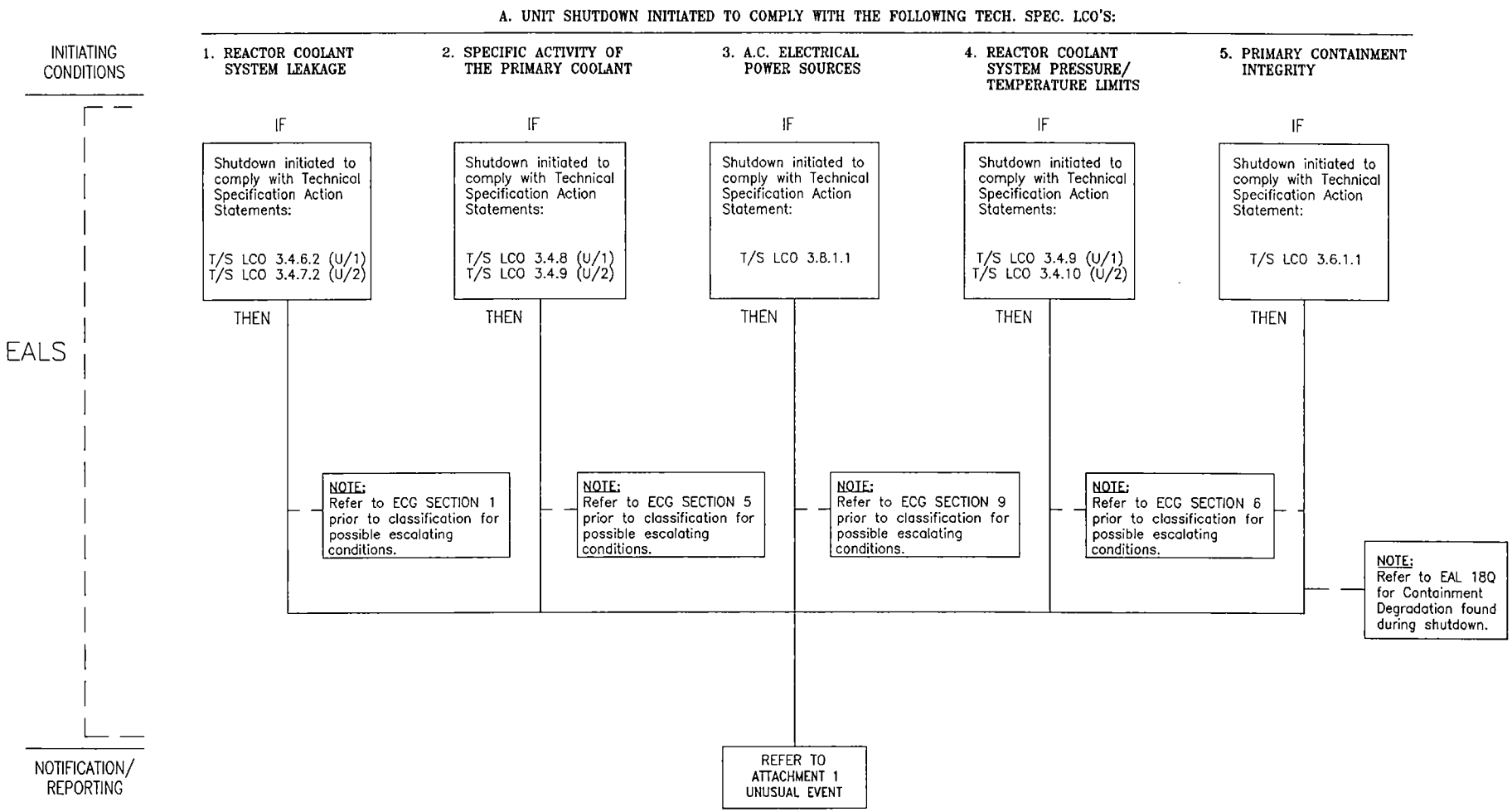
On-site events which involve alarms, sirens or other noise which may be heard off-site.

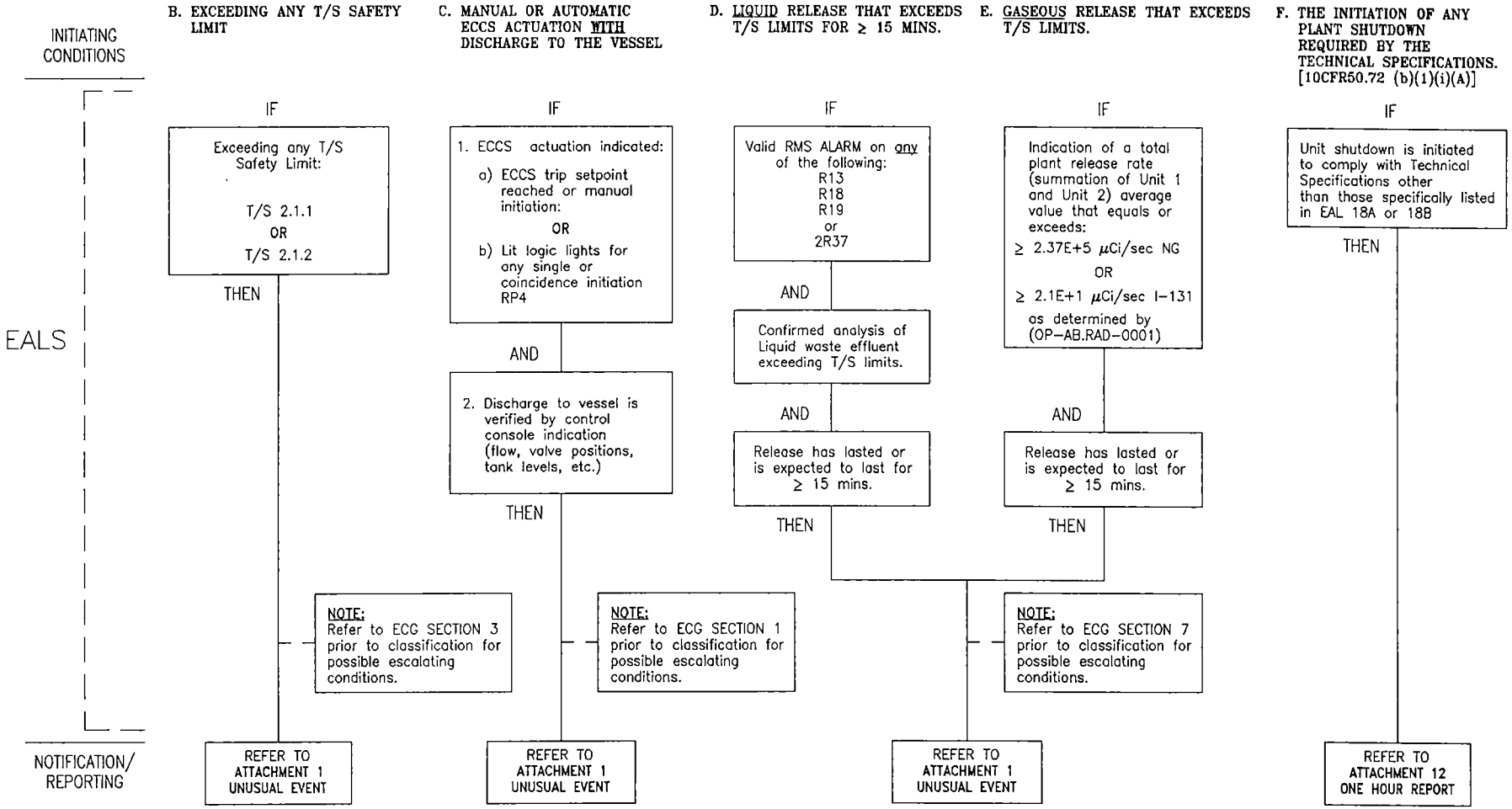
THEN

REFER TO ATTACHMENT 21 MOU / LACT

CONTROL COPY # 101

SECTION 18 TECHNICAL SPECIFICATION / PLANT STATUS CHANGES




INITIATING CONDITIONS
EALS
NOTIFICATION/ REPORTING
B. EXCEEDING ANY T/S SAFETY LIMIT
IF
Exceeding any T/S Safety Limit:
T/S 2.1.1
OR
T/S 2.1.2
THEN
NOTE: Refer to ECG SECTION 3 prior to classification for possible escalating conditions.
REFER TO ATTACHMENT 1 UNUSUAL EVENT
C. MANUAL OR AUTOMATIC ECCS ACTUATION WITH DISCHARGE TO THE VESSEL
IF
1. ECCS actuation indicated:
a) ECCS trip setpoint reached or manual initiation:
OR
b) Lit logic lights for any single or coincidence initiation RP4
AND
2. Discharge to vessel is verified by control console indication (flow, valve positions, tank levels, etc.)
THEN
NOTE: Refer to ECG SECTION 1 prior to classification for possible escalating conditions.
REFER TO ATTACHMENT 1 UNUSUAL EVENT
D. LIQUID RELEASE THAT EXCEEDS T/S LIMITS FOR ≥ 15 MINS.
IF
Valid RMS ALARM on any of the following:
R13
R18
R19
or
2R37
AND
Confirmed analysis of Liquid waste effluent exceeding T/S limits.
AND
Release has lasted or is expected to last for ≥ 15 mins.
THEN
E. GASEOUS RELEASE THAT EXCEEDS T/S LIMITS.
IF
Indication of a total plant release rate (summation of Unit 1 and Unit 2) average value that equals or exceeds:
≥ 2.37E+5 μCi/sec NG
OR
≥ 2.1E+1 μCi/sec I-131
as determined by (OP-AB.RAD-0001)
AND
Release has lasted or is expected to last for ≥ 15 mins.
THEN
NOTE: Refer to ECG SECTION 7 prior to classification for possible escalating conditions.
REFER TO ATTACHMENT 1 UNUSUAL EVENT
F. THE INITIATION OF ANY PLANT SHUTDOWN REQUIRED BY THE TECHNICAL SPECIFICATIONS. [10CFR50.72 (b)(1)(i)(A)]
IF
Unit shutdown is initiated to comply with Technical Specifications other than those specifically listed in EAL 18A or 18B
THEN
REFER TO ATTACHMENT 12 ONE HOUR REPORT

SECTION 18 TECHNICAL SPECIFICATION / PLANT STATUS CHANGES

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

G. ANY DEVIATION FROM T/S OR LICENSE CONDITION IN AN EMERGENCY WHEN NEEDED TO PROTECT THE HEALTH AND SAFETY OF THE PUBLIC [10CFR50.72 (b)(1)(i)(B)]

IF

Action required because no action consistent with T/S or license can provide adequate or equivalent protection in an emergency

NOTE: Such action must be approved at least by a licensed SRO.

NOTE: Action taken per 10CFR50.54X shall be reported per this EAL.

THEN

H. ANY EVENT OR CONDITION DURING OPERATION THAT RESULTS IN THE CONDITION OF THE PLANT BEING SERIOUSLY DEGRADED [10CFR50.72 (b)(1)(ii)]

IF

As judged by the SNSS/EDO, an event or condition is found during plant operation that results in the plant, including principal safety barriers, being in any of the following conditions:

An unanalyzed condition that significantly compromises plant safety.

OR

In a condition outside the design basis

OR

In a condition not covered by operating or emergency procedures

THEN

I. MAJOR LOSS OF EMERGENCY ASSESSMENT CAPABILITY, OFFSITE RESPONSE CAPABILITY, OR COMMUNICATIONS CAPABILITY [10CFR50.72 (b)(1)(v)]

IF

SNSS/EDO determines that an event(s) (excluding a scheduled test or maintenance activity) has occurred that would impair the ability to deal with an accident or emergency such as:

1. Loss of ANY one of the following:
   - Emergency Notification System (ENS) for > 1 Hr. (Not applicable if NRC notifies PSE&G of the loss)
   - Nuclear Emergency Telephone System. (NETS) for > 1 Hr.
   - Offsite Sirens (>25%) for > 1 Hr.
   - Use of the TSC or EOF.
   - SPDS for > 24 Hrs. (>2 CFST's Inop)
   - All Meteorological data for > 24 hours.
   - Site access due to Acts of Nature (snow, flood, etc.)
   - Control Room habitability (SCBA's required in CR)
   - All or most (> 75%) OHA's for < 15 minutes in MODES 1,2,3,4.
   - All or most (> 75%) OHA's in MODE 5, 6, Defueled.
   - All plant vent Radiation monitors. (R16s, R41s, R45s)
   - P250 or Aux Annunciator system for >24 Hrs.

   OR
2. Concurrent loss of multiple Accident or Emergency plant indicators or monitors which significantly impairs assessment capabilities

THEN

NOTE: Refer to EAL 10A if extent of loss requres shutdown

NOTE: Refer to EAL's 10B or 10C if loss of OHA's for ≥ 15 min.

NOTE: Refer to ECG Section 11 if Control Room is evacuated

REFER TO ATTACHMENT 12 ONE HOUR REPORT

J. RESERVED FOR FUTURE USE

K. ANY UNPLANNED OR ACCIDENTAL CRITICALITY [10CFR70.52 (a)]

IF

Any unplanned or accidental criticality

THEN

REFER TO ATTACHMENT 12 ONE HOUR REPORT

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

L. ACTUATION OF ENGINEERED SAFETY FEATURE EXCEPT PREPLANNED [10CFR50.72 (b)(2)(ii)]

IF

Any event or condition that results in manual or automatic actuation of any Engineered Safety Feature (ESF) including the Reactor Protection System (RPS).

AND

ESF / RPS Actuation is determined to be reportable in accordance with NC.NA-AP.ZZ-0006(Q), Attachment 4.

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

M. REACTOR TRIP EXCEPT PREPLANNED [10CFR50.72 (b)(2)(ii)]

IF

Manual or automatic Reactor Trip except part of a preplanned sequence during testing or operation.

NOTE:
For ECCS actuation with discharge to the RCS, refer to EAL 18C prior to classification.

N. ANY EVENT FOUND WHILE SHUTDOWN THAT WOULD HAVE SERIOUSLY DEGRADED PLANT [10CFR50.72 (b)(2)(i)]

IF

Any event, found while the reactor is shut down, that, had it been found during operation, whould have resulted in the Plant, including its principal safety barriers,

being seriously degraded

OR

being in an unanalyzed condition that significantly compromises Plant safety.

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

O. STEAM GENERATOR TUBE INSPECTIONS WHICH FALL INTO CATEGORY C-3 THAT HAVE BEEN EVALUATED FOR REPORTABILITY PURSUANT TO 10CFR50.72 (b) (2) (i).
[T/S 4.4.5.5C.] U1
[T/S 4.4.6.5C.] U2

IF

Results of SG tube inspections which fall into Category C-3 of T/S 4.4.5.2(6.2).

AND

An Engineering evaluation has determined that it is reportable pursuant to 10CFR50.72 (b)(2)(i).

THEN

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

P. EVENT CONDITION THAT ALONE COULD HAVE PREVENTED CERTAIN SAFETY FUNCTIONS [10CFR50.72 (b)(2)(iii)]

IF

Any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to:

Shutdown the reactor and maintain it in a safe shutdown condition

OR

Remove residual heat

OR

Control the release of radioactive material

OR

Mitigate the consequences of an accident

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

Q. ABNORMAL DEGRADATION OF THE CONTAINMENT STRUCTURE DETECTED DURING SHUTDOWN THAT HAS BEEN EVALUATED FOR REPORTABILITY PURSUANT TO 10CFR50.72 (b)(2)(i) [T/S 4.6.1.6.2]

IF

Any abnormal degradation of the Containment structure detected by visual inspection of exposed accessible interior and exterior surfaces during shutdown

AND

An Engineering evaluation has determined that it is reportable pursuant to 10CFR50.72 (b)(2)(i)

THEN

NOTE
Events covered above may include one or more:
procedural errors, equipment failures

AND/OR

discovery of design, analysis, fabrication, construction and/or procedural inadequacies

R. EVENTS/CONDITIONS WARRANT VOLUNTARY/ COURTESY NRC NOTIFICATION [10CFR50.72 - VOLUNTARY REPORT]

IF

An Abnormal Event is EITHER in progress or has occurred

OR

Plant Conditions are changing or have changed in an abnormal, unexpected, or unexplained manner

AND

NO other EALs appear to be applicable

AND

In the judgement of the SNSS, voluntary or courtesy notification to the NRC is warranted

THEN

REFER TO ATTACHMENT 14 FOUR HOUR REPORT

S. VIOLATION OF THE REQUIREMENTS CONTAINED IN THE OPERATING LICENSE [LICENSE CONDITION 2]

IF

Violation of the requirements contained in Section 2.C of the Operating License except those provisions of Section 2.C (2)

THEN

REFER TO ATTACHMENT 20 24 HOUR REPORT

TECHNICAL SPECIFICATION / PLANT STATUS CHANGES

INITIATING CONDITIONS

EALS

NOTIFICATION/ REPORTING

T. EXCESSIVE HEAT UP/COOL DOWN RATES
[T/S 3.4.9.1 OR 9.2] U1
[T/S 3.4.10.1 OR 10.2] U2

IF

Any of the T/S LCO's for RCS or PZR heatup or cooldown rates are exceeded.

THEN

U. EVENT RESULTING IN DISCHARGE FROM A SAFETY VALVE
[JAN 1983, LTR TO NRC]

IF

Any PZR code safety valve discharges which requires a necessary inspection of the inlet piping and an engineering evaluation.

THEN

V. EVENT RESULTING IN OVERPRESSURIZATION THAT MAY HAVE AFFECTED THE STRUCTURAL INTEGRITY OF THE STEAM GENERATORS
[T/S 3.7.2.1] U1
[T/S 3.7.2] U2

IF

The temperature of either the primary or secondary coolant in any Steam Generator is

$\leq$ 70 °F when

the pressure of either coolant in the Steam Generator is

> 200 psig

THEN

W. RCS CHEMISTRY DETERMINED TO BE OUTSIDE ALLOWABLE LIMITS
[T/S 3.4.7] U1
[T/S 3.4.8] U2

IF

The concentration of either chloride or fluoride in the RCS is in excess of its Steady State Limit for more than 24 hours

OR

in excess of its Transient Limit,

thereby requiring an engineering evaluation to determine the effects of the out of limit condition on the structural integrity of the RCS

THEN

X. DISCOVERY OF INOPERABLE SNUBBERS
[T/S 3.7.9]

IF

One or more snubbers are found to be inoperable and have been replaced or restored to an OPERABLE status, an engineering evaluation shall be performed per T.S 4.7.9c.

THEN

NOTE:
Attachment 22 is for the purpose of initiating any Tech. Spec. required engineering evaluations. This Attachment should be implemented in parallel with any other Attachment for non-emergencies or Unusual Events as needed for Regulatory required Notifications.

REFER TO ATTACHMENT 22 OTHER

ATTACHMENT 1

UNUSUAL EVENT
AT
SALEM

CONTROL COPY # 101

Table of Contents

I. EMERGENCY COORDINATOR LOG SHEET

INSTRUCTIONS:

1. This is a permanent record.
2. Each step should be initialed or marked N/A as appropriate.
3. Emergency Coordinator (EC) responsibility is fulfilled by: _____ (Name)
   Title: _____ (SNSS/EDO/ERM)

Initials

_____ EC **A. Declare an UNUSUAL EVENT.** Notify Control Room Staff.

ECG Section _____ Initiating Condition _____

Declared at _____ (time) hrs on _____ (date)

NOTE

If directed to implement this attachment due to a "Reduction" of the event, proceed to Section "C" and DO NOT implement Section "B".

B. NOTIFICATIONS

_____ EC 1. Call communicators to the Control Room.

_____ 2. Direct the Radiation Alert Alarm be sounded and the EC following page announcement made.

"Attention all personnel, Attention all personnel"
"Salem is in an Unusual Event Condition due to
_____"
(Repeat)

Initials

____ EC 3. Check appropriate boxes and provide brief description of the event on the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment). Complete, approve, and provide ICMF to the Designated Communicator (CM1).

____ EC 4. Direct the Designated Communicator (CM1) to implement **Attachment 6** and make the notifications on the Communications Log within the time limits specified.

____ EC 5. Direct the Secondary Communicator (CM2) to implement **Attachment 8** for an Unusual Event.

> NOTE
>
> Complete all applicable steps of subsections C thru H below. Then proceed to subsection I.

C. TRANSPORT OF INJURED TO HOSPITAL ☐ YES ☐ NO

____ EC 1. Coordinate onsite medical response per procedure SC.FP-EO.ZZ-0003(Z), "Control Room Medical Emergency Response."

D. SERIOUS INJURY/FATALITY OF AN NBU EMPLOYEE

☐ YES ☐ NO

____ EC 1. Notify the **Safety Coordinator or** representative with information requested on page 15 of this attachment.

_____ notified at _____ hrs on _____
name time date

____ EC 2. Notify the employee's department manager of the event and direct the department manager to coordinate notification of the employee's family.

_____ notified at _____ hrs on _____
name time date

Initials

E. SECURITY RELATED EVENT ☐ YES ☐ NO

____ EC 1. Notify the PSE&G Security Supervisor (X2222) to implement the Security Contingency Plan.

____ EC 2. If a bomb search is required;
a. Direct the OSC to be activated per EPIP 202S.
b. Direct the OSC Coordinator to implement Bomb Search Operations IAW EPIP 202S, Appendix 1.
c. Direct the NCOs to check control boards for correct valve lineups.

F. LOSS, THEFT, DIVERSION OF SPECIAL NUCLEAR MATERIAL (SNM) ☐ YES ☐ NO

____ EC 1. Notify **NRC Region I Office** (610-337-5000) of the event immediately **(within 1 hour)**. Use NRC Data Sheet to record additional information provided to the NRC.

_____ Notified at _____ hrs on _____
name time date

G. SAFETY LIMIT VIOLATIONS (per Tech Specs) ☐ YES ☐ NO

____ EC 1. Notify the Director - Quality Assurance and Nuclear Safety Review within 24 hours.
Notified at _____ hrs on _____
time date

____ EC 2. Notify the CNO & President Nuclear Business Unit within 24 hours.
Notified at _____ hrs on _____
time date

H. PRIMARY TO SECONDARY TUBE LEAK IS IN PROGRESS ☐ YES ☐ NO

____ EC 1. Ensure implementation of S1/S2.OP-AB.SG-0001(Q), Steam Generator Tube Leak.

I. EMERGENCY COORDINATOR DUTIES

____ EC 1. Notify the Hope Creek Senior Nuclear Shift Supervisor (NETS - x5224; 9-339-3027; 9-339-3059) and provide a briefing on the Unusual Event.

Initials

____ EC 2. If necessary, account for personnel in accordance with Accountability Instruction provided in Section II, (on pages 7, 8, & 9) of this attachment.

AND

____ EC If Accountability is implemented direct the OSC Coordinator to activate the OSC in accordance with EPIP 202S.

> NOTE
>
> SSCL should be transmitted approximately every 30 minutes or immediately if a significant change in station status occurs.

____ EC 3. Upon receipt of the Station Status Checklist (SSCL) from the (CM2), review and approve for transmittal.

____ EC 4. Ensure the completion and approval of the NRC Data Sheet form.

a. Obtain the form (both pages) from the CM2 (Att. 8).
b. Provide the approved form to the CM2 for transmittal to the NRC as soon as possible, but not to exceed **ONE HOUR**.

> NOTE
>
> As manpower permits, the Emergency Coordinator may assign an additional communicator (preferably an RO or SRO) to provide continuous updates to the NRC. The assignment of an additional communicator should not be made if personnel being considered are required to mitigate the event or to complete high priority Emergency Response functions.

c. Notify the NRC of any significant changes in Plant Status, Emergency Status or any actions taken in accordance with 10CFR50.54(x).

Initials

d. Direct CM2 to log or document (via NRC Data Sheet) any additional information provided to the NRC. This includes, but is not limited to, changes in Plant Status, Emergency Status, or any actions taken in accordance with 10CFR50.54(x).

____ EC 5. If relieved as EC prior to termination of the Unusual Event, document the name of your relief below.

_____ assumed EC duties at_____hrs.
Name time

____ EC 6. If the event classification escalates above an **Unusual Event**, exit this attachment and implement a new attachment as directed by the classifying section.

Escalated to (circle one) **Alert - SAE - GE**

_____ EC 7. When necessary to terminate the event go to Section III, "Termination", of this attachment.

_____ EC 8. Ensure that appropriate reports are made IAW Section IV, "Reporting" of this attachment.

II. ACCOUNTABILITY INSTRUCTION FOR THE PROTECTED AREA

Initials/Time

1. Implement Assembly and Accountability as follows:

____/____ EC

a. Notify Security to implement EPIP 901, "Onsite Security Response," and EPIP 902, "Accountability/Evacuation," Sections 3.1 and 3.2 only, for Assembly and Accountability.

____/____ EC

b. Notify the Hope Creek SNSS to implement Appendix 6 of EPIP 101H, "Accountability Instructions For An Unusual Event at Salem."

____/____ EC

c. Direct the Radiation Alert Alarm be sounded and the following page announcement made.

"Attention all personnel, Attention all personnel"

"Salem is in an Unusual Event condition due to _____"

"All PSE&G personnel assemble at your accountability stations. All contractors leave the Owner Controlled Area immediately". (Repeat)

____/____ EC

d. Allow five (5) minutes for key personnel to reach accountability stations, then continue with the next step of this procedure.

> NOTE
>
> Timely page announcements are crucial to ensure accountability results are available within 30 minutes.

____/____ EC (T+0 Min)

e. Sound the Radiation Alert Alarm and announce on the station page:

"Attention, Attention, all accountability stations implement accountability." (Repeat)

II. ACCOUNTABILITY INSTRUCTION FOR THE PROTECTED AREA (CONT)

Initials/Time

> NOTE
>
> Personnel dispatched by the SNSS or OSC Coordinator who are taking vital actions to mitigate emergency events may be accounted for verbally and the accountability card exemption form of EPIP 202S, completed and deposited to security.

____/____ EC

f. Ensure accountability cards for the Control Room Staff and communicators are collected and provided to the OSC Coordinator.

____/____ EC (T+10 Min)

g. Announce the following on the station page, 10 minutes after the first accountability announcement.

"Attention, Attention. All accountability stations complete your initial accountability." (Repeat)

____/____ EC (T+20 Min)

h. Announce the following on the station page (20 minutes after the first accountability announcement.)

"Attention, Attention. All accountability stations complete your 30 minute accountability." (Repeat)

____/____ EC (T+30 Min)

i. Obtain from Security a list of unaccounted for personnel. If Security has not supplied results of the accountability within 30 minutes of the first accountability announcement, then contact the TSC Security Liaison and request accountability results.

Hope Creek (NETS X5214)
Salem (NETS X5117)

II. ACCOUNTABILITY INSTRUCTION FOR THE PROTECTED AREA (CONT)

Initials/Time

____/____ EC

j. Designate an individual to attempt to locate unaccounted for personnel as follows:

> Note
>
> Steps A through D should be coordinated with the other Station's SNSS, or EDO, or their designees.

A. Page individuals over the plant page.
B. Obtain feedback from unaccounted for person's co-workers/supervisors on last known location/job assignment.
C. Request Security's assistance in locating unaccounted for personnel.
D. Call individual's home to verify work schedule.

____/____ EC

k. Update Security as missing personnel are accounted for.

____/____ EC

l. Initiate Search and Rescue Operations in accordance with EPIP 202S, Operations Support Center (OSC) Activation and Operations, if appropriate.

____/____ EC

m. Accountability actions are complete, return to step I-3 of this attachment (page 5).

III. TERMINATION

Initials

____ EC 1. Terminate when either of the following conditions are met:

a. None of the Emergency Action Levels are defined in the ECG are applicable, and the plant is in a stable condition.

OR

b. If the Emergency Action levels are still applicable and the plant is in a stable condition, then refer to the EMERGENCY COORDINATOR RECOVERY CHECKLIST of this attachment (page 12) to determine if the Unusual Event can be terminated by entering recovery.

____ EC 2. Upon completion of Step 1 of this section complete EMERGENCY TERMINATION/RECOVERY FORM of this attachment (page 13) as follows:

a. If terminating the event without recovery, complete Part "A".

b. If terminating the event with recovery, complete Part "B".

____ EC 3. If terminating the event with Recovery, direct the Recovery Manager (DUTY EDO) to implement Recovery Operations and assume the following responsibilities:

a. Evaluation of the emergency (may be delegated to SERT).

b. Determine measures required to return plant to normal operations.

c. Coordinate contractor support as required.

____ EC 4. Provide the completed EMERGENCY TERMINATION/ RECOVERY FORM, to the Communicator and direct him/her to make the proper notification(s) using the Communications Log in Attachment 6 (time limits do not apply to termination calls).

III. TERMINATION (CONT)

Initials

_____ EC 5. Notify the Hope Creek SNSS that the Unusual Event has been terminated.

_____ EC 6. Collect all documentation and forward as indicated in Section IV, of this attachment.

III. **TERMINATION (CONT)**

EMERGENCY COORDINATOR'S RECOVERY CHECKLIST FOR UNUSUAL EVENT

THE EMERGENCY COORDINATOR SHALL:

A. Answer the following questions which are prerequisites for terminating an Unusual Event by entering recovery.

Are Radiological releases terminated or, if not terminated, is the release rate decreasing and less then the Unusual Event Classification Emergency Action Levels in Section 7 of the ECG?

☐ YES ☐ NO

Are Radiation Levels in all areas of the plant either stable or decreasing?

☐ YES ☐ NO

Is the plant in a safe, stable condition with no reason to expect further degradation?

☐ YES ☐ NO

Is the integrity of the station power supplies and ECCS equipment, required for safe shutdown, intact?

☐ YES ☐ NO

Can full time operations of the Operations Support Center be terminated?

☐ YES ☐ NO

B. If questions above have all been answered YES then proceed to Step C on this checklist, otherwise, termination of the event should not be considered at this time.

C. Has the Emergency Duty Officer been briefed on the emergency situation and concurred that terminating the event with an EAL still applicable is a correct course of action? If yes, proceed to Step D on this checklist. If no, termination of the event should not be considered at this time.

☐ YES ☐ NO

_____
Name of Contact

D. Sign and date this checklist and return to Section III, Step 2, (page 10) of this ECG Attachment and proceed with termination with recovery.

_____ _____/_____
Emergency Coordinator Date Time

III. TERMINATION (CONT)

EMERGENCY TERMINATION/RECOVERY FORM - UNUSUAL EVENT

PART "A" - EMERGENCY TERMINATION WITHOUT RECOVERY:

THIS IS _____, COMMUNICATOR IN THE CONTROL
(communicator's name)

ROOM, AT THE SALEM GENERATING STATION. THIS IS TO

NOTIFY YOU THAT AS OF _____, ON _____, THE
(time) (date)

UNUSUAL EVENT HAS BEEN TERMINATED.

_____
EC APPROVAL TO TRANSMIT

PART "B" - TERMINATION WITH RECOVERY:

THIS IS _____, COMMUNICATOR IN THE CONTROL
(communicator's name)

ROOM, AT THE SALEM GENERATING STATION. THIS IS TO

NOTIFY YOU THAT AS OF _____, ON _____, THE
(time) (date)

UNUSUAL EVENT HAS BEEN TERMINATED AND SALEM IS NOW IN

A RECOVERY STATUS. _____ IS THE RECOVERY
DUTY EDO

MANAGER.

_____
EC APPROVAL TO TRANSMIT

IV. REPORTING

Instructions
1. This is a permanent document - all pages of this Attachment.
2. Appropriate documents shall be appended to this form and the package expedited through all steps.
3. Responsible person shall initial each step.

Initials

_____ SNSS — 1. Ensure that an Action Request (AR) is prepared.

AR# _____

_____ SNSS — 2. Forward this attachment and supporting documentation, to the Operations Manager (OM).

_____ OM — 3. Review this attachment, the (AR) and any other relevant information for correct classification of event and corrective action taken.

_____ OM — 4. Contact the LER Coordinator (LERC) and request that the required reports be prepared. Provide this attachment and any other supporting documentation to the LERC.

_____ LERC — 5. Prepare required reports.

Report or LER Number _____

_____ LERC — 6. When no longer required, send this attachment and appended documents to the Manager - Radiological Safety (MRS).

_____ MRS — 7. Forward this attachment to the Central Technical Document Room for microfilming.

REPORT OF SERIOUS INJURY/DEATH
NUCLEAR BUSINESS UNIT EMPLOYEE

EMPLOYEE INFORMATION

NAME _____ EMPLOYEE # _____ AGE _____

HOME ADDRESS _____

HOME PHONE # _____ MARITAL STATUS _____

JOB TITLE _____ LOCATION _____

SOCIAL SECURITY # _____

ACCIDENT/INJURY DESCRIPTION

DATE OF ACCIDENT _____ TIME _____ AM/PM

DID INJURIES RESULT IN DEATH ☐ YES ☐ NO

EXTENT OF INJURIES _____

_____

_____

DESCRIPTION OF ACCIDENT _____

_____

_____

WHERE TAKEN AFTER ACCIDENT _____

_____

Safety Coordinator or Representative (Contact One)

	Work#	Home#	Pager#
John Horner	2965	609-678-6308	342-5866
Cliff Knaub	2812	609-358-3074	478-5706
Paul Eldreth	2828	609-678-8504	478-5983

INITIAL CONTACT MESSAGE FORM

I. THIS IS _____ , COMMUNICATOR IN THE CONTROL ROOM
(NAME)

AT THE **SALEM** NUCLEAR GENERATING STATION, UNIT NO. _____.

☐ THIS IS NOTIFICATION OF AN **UNUSUAL EVENT** WHICH WAS DECLARED AT_____ ON_____.
(24 HOUR CLOCK) (DATE)

II. ECG SECTION _____ INITIATING CONDITION _____

DESCRIPTION OF EVENT: _____

_____

_____

III. ☐ THERE IS NO RADIOLOGICAL RELEASE IN PROGRESS.
☐ THERE IS A RADIOLOGICAL RELEASE IN PROGRESS.
} see NOTE for release definition

33 FT. LEVEL WIND SPEED:_____ WIND DIRECTION (FROM):_____
(From MET Tower) (MPH) (DEGREES)

IV.

NO PROTECTIVE ACTIONS ARE RECOMMENDED AT THIS TIME

_____
EC Initials
(EC Approval to Transmit ICMF)

NOTE: Radiological Release is defined as: Plant Effluent > Tech Spec Limit of 2.42E+05 uCi/sec Noble Gas or 2.1E+01 uCi/sec I-131.

ATTACHMENT 2

ALERT
AT
SALEM

Table of Contents

NOTE

This Attachment is performed by the EC located in the Control Room, TSC, or EOF. References to the Communicators (CM1/CM2) are applicable to the TSC Communicators (TSC1/TSC2) or EOF Communicators (EOF1/EOF2) when this Attachment is implemented by the EDO or ERM, respectively.

I. EMERGENCY COORDINATOR LOG SHEET

INSTRUCTIONS:

1. This is a permanent record
2. Each step should be initialed or marked N/A as appropriate.
3. Emergency Coordinator (EC) responsibility is fulfilled by: _____ (name)
   Title: _____ (SNSS/EDO/ERM)

Initials

____ EC A. **Declare an ALERT.** Notify the Control Room staff.

ECG Section _____ Initiating Condition _____

Declared at _____ (time) hrs on _____ (date)

NOTE

If directed to implement this attachment due to a "Reduction" of the event, proceed to Section "C" and DO NOT implement Section "B".

B. **NOTIFICATIONS**

____ EC 1. Call communicators to the Control Room.

____ EC 2. Check appropriate boxes and provide a brief description of the event on the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment). Complete, approve, and provide ICMF to the Designated Communicator (CM1).

____ EC 3. Direct the Designated Communicator (CM1) to implement **Attachment 6** and make the notifications on the Communications Log within the time limits specified.

B. **NOTIFICATIONS (cont.)**

Initials

____ EC 4. Direct the Secondary Communicator (CM2) to implement **Attachment 8** for an Alert classification.

NOTE
Do not delay completion of the next step as prompt callout system activation is essential.

____ SNSS 5. If not done previously call the I.T.O.C. Operator on NETS 5027, (backup #'s only if NETS does not work, 201-430-7191 or 201-430-8153) and provide the following message:

"This is _____, Senior Nuclear Shift
Name
Supervisor at Salem. Please implement EPIP-204S, Salem Emergency Response Callout, immediately. This procedure is being implemented for an Actual Emergency."

_____ notified at _____
I.T.O.C. operator name Time
(EP96-003)

____ EC 6. Notify the Hope Creek SNSS (NETS X5224; 9-339-3027) and provide a briefing on the Alert conditions. Direct the implementation of EPIP 101H, Section 3.1.

____ EC C. **SUPPORT**

If not done previously, direct the OSC Coordinator to activate the OSC in accordance with EPIP 202S, OSC Activation and Operations.

____ EC D. **EMERGENCY PLAN IMPLEMENTATION**

Implement EPIP 102S, Alert, while continuing in this attachment.

____ EC E. **SECURITY RELATED EVENT**

For security event, notify the PSE&G Security Supervisor (X2222) to implement the Security Contingency Plan and Procedures.

F. TECHNICAL COMMUNICATIONS

Initials

> NOTE
>
> The Station Status Checklist is a Followup Notification and should be transmitted approximately every 30 minutes or immediately if a significant change in station status occurs.

____ EC 1. Upon receipt of the Station Status Checklist (SSCL) from the CM2, review and approve for transmittal. Implement more frequently for significant station status change.

____ EC 2. Ensure completion and approval of the NRC Data Sheet form.
   a) Obtain the form (both pages) from the CM2 (Att. 8)
   b) Provide the approved form to the CM2 for transmittal to the NRC as soon as possible, but not to exceed **ONE HOUR.**

> NOTE
>
> The NRC Data Sheet is sent to the NJ BNE and DEMA <u>for Information only</u> as supplemental data.

> NOTE
>
> As manpower permits, the Emergency Coordinator may assign an additional communicator (preferably an RO or SRO) to provide continuous updates to the NRC. The assignment of an additional communicator should <u>not</u> be made if personnel being considered are required to mitigate the event or to complete high priority Emergency Response functions.

Initials

c) Notify the NRC of any significant changes in Plant Status, Emergency Status or any actions taken in accordance with 10CFR50.54(x).

d) Direct CM2 to log or document (via NRC Data Sheet) any additional information provided to the NRC. This includes, but is not limited to, changes in Plant Status, Emergency Status, or any actions taken in accordance with 10CFR50.54(x).

____ EC 3. When turning over EC duties ensure your communicators are directed to turnover notifications responsibilities to the facility being activated.

____ EC **G. EMERGENCY ESCALATION**

IF the event classification escalates above an **ALERT**, THEN exit this attachment and implement a new attachment as directed by the classifying section EAL.

Escalated to (circle one) **SAE - GE**

____ EC **H. RELIEF/TURNOVER**

IF relieved as EC prior to termination of the **ALERT**, THEN turnover responsibility for this attachment to the oncoming EC and document your relief below and in EPIP 102S.

_____ assumed EC duties at _____ hrs.
name time

____ EC **I. REPORTING**

Ensure that appropriate reports are made IAW Section II (page 6) of this Attachment.

____ EC **J. RECORDS**

Ensure that all completed documents related to this Event are forwarded in accordance with reporting requirements of Section II of this Attachment.

II. REPORTING

Initials

Instructions
1. This is a permanent document.
2. Appropriate documents shall be appended to this form and the package expedited through all steps.
3. Responsible person shall initial each step.

Initials		
SNSS	1.	Ensure that an Action Request (AR) is prepared. AR# _____
SNSS	2.	Forward this Attachment, and any supporting documentation to the Operations Manager (OM).
OM	3.	Review this ECG attachment, the Action Request and any other relevant information for correct classification of event and corrective action taken.
OM	4.	Contact the LER Coordinator (LERC) and request that the required reports be prepared. Provide this Attachment and any other supporting documentation to the LERC.
LERC	5.	Prepare required reports. Report or LER Number _____
LERC	6.	When no longer required send this attachment and appended documents to the Emergency Preparedness Manager (EPM).
EPM	7.	Forward this Attachment package to the Central Technical Document Room (CTDR) for microfilming.

INITIAL CONTACT MESSAGE FORM

I. THIS IS _____ , COMMUNICATOR IN THE
(NAME)

____CONTROL ROOM
____TECHNICAL SUPPORT CENTER

AT THE **SALEM** NUCLEAR GENERATING STATION, UNIT NO.____

II.

☐ THIS IS NOTIFICATION OF AN **ALERT** WHICH WAS DECLARED AT_____ ON _____.
(TIME - 24 HOUR CLOCK) (DATE)

ECG SECTION _____ INITIATING CONDITION _____

DESCRIPTION OF EVENT: _____

_____

_____

III.

☐ THERE IS NO RADIOLOGICAL RELEASE IN PROGRESS.
☐ THERE IS A RADIOLOGICAL RELEASE IN PROGRESS.
} see NOTE for release definition

33 FT. LEVEL WIND SPEED:_____ (MPH) WIND DIRECTION (FROM):_____ (DEGREES)

IV. **NO PROTECTIVE ACTIONS ARE RECOMMENDED AT THIS TIME**

_____
EC Initials
(EC Approval to Transmit ICMF)

NOTE: Radiological Release is defined as: Plant Effluent > Tech Spec Limit of 2.42E+05 uCi/sec Noble Gas or 2.1E+01 uCi/sec I-131.

ATTACHMENT 3

SITE AREA EMERGENCY
AT
SALEM

Table of Contents

NOTE

This Attachment is performed by the EC located in the Control Room, TSC, or EOF. References to the Communicators (CM1/CM2) are applicable to the TSC Communicators (TSC1/TSC2) or EOF Communicators (EOF1/EOF2) when this Attachment is implemented by the EDO or ERM, respectively.

I. EMERGENCY COORDINATOR LOG SHEET

Initials

INSTRUCTIONS:

1. This is a permanent record
2. Each step should be initialed or marked N/A as appropriate.
3. Emergency Coordinator (EC) responsibility is fulfilled by: _____ (name)
   Title: _____ (SNSS/EDO/ERM)

____ EC A. **Declare a SITE AREA EMERGENCY.** Notify the Control Room staff.

ECG Section _____ Initiating Condition _____

Declared at _____ (time) hrs on _____ (date)

NOTE

If directed to implement this attachment due to a "Reduction" of the event, proceed to Section "C" and DO NOT implement Section "B".

B. NOTIFICATIONS

____ EC 1. Call communicators to the Control Room.

____ EC 2. Check appropriate boxes and provide a brief description of the event on the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment). Complete, approve, and provide ICMF to the Designated Communicator (CM1).

B. NOTIFICATIONS (cont.)

Initials

____ EC 3. Direct the Designated Communicator (CM1) to implement **Attachment 6** and make the notifications on the Communications Log within the time limits specified.

____ EC 4. Direct the Secondary Communicator (CM2) to implement **Attachment 8** for a Site Area Emergency.

> NOTE
> Do not delay completion of the next step as prompt callout system activation is essential.

____ SNSS 5. If not done previously, call the I.T.O.C. Operator on NETS 5027, (backup #'s only if NETS does not work, 201-430-7191 or 201-430-8153) and provide the following message:

"This is _____, Senior Nuclear Shift
Name
Supervisor at Salem. Please implement EPIP-204S, Salem Emergency Response Callout, immediately. This procedure is being implemented for an Actual Emergency."

_____ notified at _____.
I.T.O.C. Operator name — Time

(EP96-003)

____ EC 6. Notify the Hope Creek SNSS (NETS X5224; 9-339-3027) and provide a briefing on the Site Area Emergency conditions. Direct the implementation of EPIP 101H, Section 3.2.

____ EC **C. SUPPORT**

If not done previously, direct the OSC Coordinator to activate the OSC in accordance with EPIP 202S, OSC Activation and Operations.

Initials

D. EMERGENCY PLAN IMPLEMENTATION

____ SNSS/ EDO — If the EC is the EDO or SNSS, implement EPIP 103S, Site Area Emergency, while continuing in this attachment.

OR

If the EC is the ERM:

____ ERM — 1. Notify the Salem EDO;

( ) Time of SAE declaration
( ) Reason (EAL exceeded)
( ) DIRECT implementation of EPIP 103S, Site Area Emergency.

____ ERM — 2. Notify EOF staff of the change in emergency classification.

____ ERM — 3. Continue with EPIP 401 while performing the rest of this attachment.

____ EC — **E. SECURITY RELATED EVENT**

For security event, notify the PSE&G Security Supervisor (X2222) to implement the Security Contingency Plan and Procedures.

F. TECHNICAL COMMUNICATIONS

> NOTE
>
> The Station Status Checklist is a Followup Notification and should be transmitted approximately every 30 minutes or immediately if a significant change in station status occurs.

____ EC — 1. Upon receipt of the Station Status Checklist (SSCL) from the CM2, review and approve for transmittal. Implement more frequently for significant station status change.

Initials

____ EC

2. Ensure completion and approval of the NRC Data Sheet form.

   a) Obtain the form (both pages) from the CM2 (Att. 8)
   b) Provide the approved form to the CM2 for transmittal to the NRC as soon as possible, but not to exceed **ONE HOUR.**

> NOTE
>
> The NRC Data Sheet is sent to the NJ BNE and DEMA <u>for information only</u> as supplemental data.

> NOTE:
>
> As manpower permits, the Emergency Coordinator may assign an additional communicator (preferably an RO or SRO) to provide continuous updates to the NRC. The assignment of an additional communicator should not be made if personnel being considered are required to mitigate the event or to complete high priority Emergency Response functions.

   c) Notify the NRC of any significant changes in Plant Status, Emergency Status or any actions taken in accordance with 10CFR50.54(x)

   d) Direct CM2 to log or document (via NRC Data Sheet) any additional information provided to the NRC. This includes, but is not limited to, changes in Plant Status, Emergency Status, or any actions taken in accordance with 10CFR50.54(x).

____ EC

3. When turning over EC duties ensure your communicators are directed to turnover notification responsibilities to the facility being activated.

Initials

_____ EC

G. PROTECTIVE ACTION RECOMMENDATION (PAR)

IF a **PAR** is developed with no escalation of the emergency status, THEN complete a new working copy of ICMF (PAR Upgrade) for this Attachment and direct the CM1 to make new notifications with a clean copy of **Attachment 6.**

_____ EC

H. EMERGENCY ESCALATION

IF the event classification escalates above a **SAE**, THEN exit this attachment and implement a new attachment as directed by the classifying section EAL.

_____ EC

I. RELIEF/TURNOVER

If relieved as EC prior to change in event classification, THEN turnover responsibility for this attachment to the oncoming EC and document your relief below and in EPIP 103S.

_____ assumed EC duties at _____ hrs.
name time

_____ EC

J. REPORTING

Ensure that appropriate reports are made IAW Section II (page 7) of this Attachment.

_____ EC

K. RECORDS

Ensure that all completed documents related to this event are forwarded in accordance with reporting requirements of Section II of this Attachment.

II. REPORTING

Initials

Instructions
1. This is a permanent document.
2. Appropriate documents shall be appended to this form and the package expedited through all steps.
3. Responsible person shall initial each step.

____ SNSS 1. Ensure that an Action Request (AR) is prepared.

AR# _____

____ SNSS 2. Forward this Attachment, and any supporting documentation to the Operations Manager (OM).

____ OM 3. Review this ECG attachment, the Action Request and any other relevant information for correct classification of event and corrective action taken.

____ OM 4. Contact the LER Coordinator (LERC) and request that the required reports be prepared. Provide this Attachment and any other supporting documentation to the LERC.

____ LERC 5. Prepare required reports.

Report or LER Number _____

____ LERC 6. When no longer required send this attachment and appended documents to the Emergency Preparedness Manager (EPM).

____ EPM 7. Forward this Attachment package to the Central Technical Document Room (CTDR) for microfilming.

INITIAL CONTACT MESSAGE FORM

I. THIS IS _____ , COMMUNICATOR IN THE
(NAME)

____CONTROL ROOM
____TECHNICAL SUPPORT CENTER
____EMERGENCY OPERATIONS FACILITY

AT THE **SALEM** NUCLEAR GENERATING STATION, UNIT NO.____

IIa. ☐ THIS IS NOTIFICATION OF A **SITE AREA EMERGENCY** WHICH WAS DECLARED AT_____ ON _____.
(TIME - 24 HOUR CLOCK) (DATE)

ECG SECTION _____ INITIATING CONDITION _____

DESCRIPTION OF EVENT: _____

_____

_____

IIb. ☐ THIS IS NOTIFICATION OF A **PROTECTIVE ACTION RECOMMENDATION UPGRADE** WHICH WAS MADE AT _____ ON _____.
(TIME - 24 HOUR CLOCK) (DATE)

Reason for PAR upgrade:_____

_____.

III. ☐ THERE IS NO RADIOLOGICAL RELEASE IN PROGRESS.
☐ THERE IS A RADIOLOGICAL RELEASE IN PROGRESS.
} see NOTE for release definition

33 FT. LEVEL WIND SPEED:_____ (MPH) WIND DIRECTION (FROM):_____ (DEGREES)

IV. ☐ NO PROTECTIVE ACTIONS ARE RECOMMENDED AT THIS TIME

	Sector(s)	Distance-Miles
☐ WE RECOMMEND **EVACUATION** AS FOLLOWS	_____	_____
	_____	_____
☐ WE RECOMMEND **SHELTERING** AS FOLLOWS	_____	_____
	_____	_____

_____
EC Initials
(EC Approval to Transmit ICMF)

NOTE: Radiological Release is defined as: Plant Effluent > Tech Spec Limit of 2.42E+05 uCi/sec Noble Gas or 2.1E+01 uCi/sec I-131.

ATTACHMENT 4

GENERAL EMERGENCY
AT
SALEM

Table of Contents

NOTE

This Attachment is performed by the EC located in the Control Room, TSC, or EOF. References to the Communicators (CM1/CM2) are applicable to the TSC Communicators (TSC1/TSC2) or EOF Communicators (EOF1/EOF2) when this Attachment is implemented by the EDO or ERM, respectively.

I. EMERGENCY COORDINATOR LOG SHEET

Initials

INSTRUCTIONS

1. This is a permanent record.
2. Each step should be initialed or marked N/A as appropriate.
3. Emergency Coordinator (EC) responsibility is fulfilled by: _____ (name)
   Title: _____ (SNSS/EDO/ERM)

____ EC **A. Declare a GENERAL EMERGENCY.** Direct the Communicators to be prepared to make notifications.

ECG Section _____ Initiating Condition _____

Declared at _____ (time) hrs on _____ (date)

NOTE

A Protective Action Recommendation (PAR) shall be made on the Initial Contact Message Form (ICMF).

B. PROTECTIVE ACTION RECOMMENDATION (PAR)

____ EC 1. Refer to page 8 of this attachment and choose the most appropriate Predetermined PAR. The worksheet (page 9) should be used to determine the affected downwind sectors.

____ EC 2. If immediately available from the SRPT (RAC or RSM), obtain a Radiologically Based PAR for comparison.

____ EC 3. Compare the Predetermined PAR and the Radiologically Based PAR and choose the most conservative for inclusion on the ICMF.

Initials

C. NOTIFICATIONS

____ EC 1. Check appropriate boxes and provide a brief description of the event on the INITIAL CONTACT MESSAGE FORM (ICMF) (last page of this attachment). Complete, approve, and provide ICMF to the Designated Communicator (CM1).

____ EC 2. Direct the Designated Communicator (CM1) to implement **Attachment 7** and make the notifications on the Communications Log within the time limits specified.

____ EC 3. Direct the Secondary Communicator (CM2) to implement **Attachment 8** for a General Emergency.

> NOTE
> Do not delay completion of the next step as prompt callout system activation is essential.

____ SNSS 4. If not done previously, call the I.T.O.C. Operator on NETS 5027, (backup #'s only if NETS does not work, 201-430-7191 or 201-430-8153) and provide the following message:

"This is _____, Senior Nuclear Shift
Name
Supervisor at Salem. Please implement EPIP-204S,Salem Emergency Response Callout, immediately. This procedure is being implemented for an Actual Emergency."

_____ notified at _____.
I.T.O.C. Operator Name — Time (EP96-003)

____ EC 5. Notify the Hope Creek SNSS (NETS X5224; 9-339-3027) and provide a briefing on the General Emergency conditions. Direct the implementation of EPIP 101H, Section 3.2.

Initials

D. SUPPORT

____ EC — If not done previously, direct the OSC Coordinator to activate the OSC in accordance with EPIP 202S, OSC Activation and Operations.

E. EMERGENCY PLAN IMPLEMENTATION

____ SNSS/EDO — If the EC is the EDO or SNSS, implement EPIP 104S, General Emergency, while continuing in this attachment.

OR

If the EC is the ERM:

____ ERM — 1. Notify the Salem EDO;

( ) Time of GE declaration
( ) Reason (EAL exceeded)
( ) DIRECT implementation of EPIP 104S, General Emergency.

____ ERM — 2. Notify EOF staff of the change in emergency classification.

____ ERM — 3. Continue with EPIP 401 while performing the rest of this attachment.

F. SECURITY RELATED EVENT

____ EC — For security event, notify the PSE&G Security Supervisor (X2222) to implement the Security Contingency Plan and Procedures.

G. TECHNICAL COMMUNICATIONS

> NOTE
>
> The Station Status Checklist is a Followup Notification and should be transmitted approximately every 30 minutes or immediately if a significant change in station status occurs.

Initials

____ EC 1. Upon receipt of the Station Status Checklist (SSCL) from the CM2, review and approve for transmittal. Implement more frequently for significant station status change.

____ EC 2. Ensure completion and approval of the NRC Data Sheet form.

a) Obtain the form (both pages) from the CM2 (Att. 8)
b) Provide the approved form to the CM2 for transmittal to the NRC as soon as possible, but not to exceed **ONE HOUR.**

NOTE

The NRC Data Sheet is sent to the NJ BNE and DEMA for information only as supplemental data.

NOTE:

As manpower permits, the Emergency Coordinator may assign an additional communicator (preferably an RO or SRO) to provide continuous updates to the NRC. The assignment of an additional communicator should not be made if personnel being considered are required to mitigate the event or to complete high priority Emergency Response functions.

c) Notify the NRC of any significant changes in Plant Status, Emergency Status or any actions taken in accordance with 10CFR50.54(x).

d) Direct CM2 to log or document (via NRC Data Sheet) any additional information provided to the NRC. This includes, but is not limited to, changes in Plant Status, Emergency Status, or any actions taken in accordance with 10CFR50.54(x).

Initials

____ EC

3. When turning over EC duties ensure your communicators are directed to turnover notifications responsibilities to the facility being activated.

____ EC

H. RELIEF/TURNOVER

IF relieved as EC prior to de-escalation of the **GE**, THEN turnover responsibility for this attachment to the oncoming EC and document your relief below and in EPIP 104S.

_____ assumed EC duties at _____ hrs.
name time

____ EC

I. REPORTING

Ensure that appropriate reports are made IAW Section II (page 7) of this Attachment.

____ EC

J. RECORDS

Ensure that all completed documents related to this Event are forwarded in accordance with reporting requirements of Section II of this Attachment.

II. REPORTING

Initials

Instructions
1. This is a permanent document.
2. Appropriate documents shall be appended to this form and the package expedited through all steps.
3. Responsible person shall initial each step.

____ SNSS 1. Ensure that an Action Request (AR) is prepared.

AR# _____

____ SNSS 2. Forward this Attachment, and any supporting documentation to the Operations Manager (OM).

____ OM 3. Review this ECG attachment, the Action Request and any other relevant information for correct classification of event and corrective action taken.

____ OM 4. Contact the LER Coordinator (LERC) and request that the required reports be prepared. Provide this Attachment and any other supporting documentation to the LERC.

____ LERC 5. Prepare required reports.

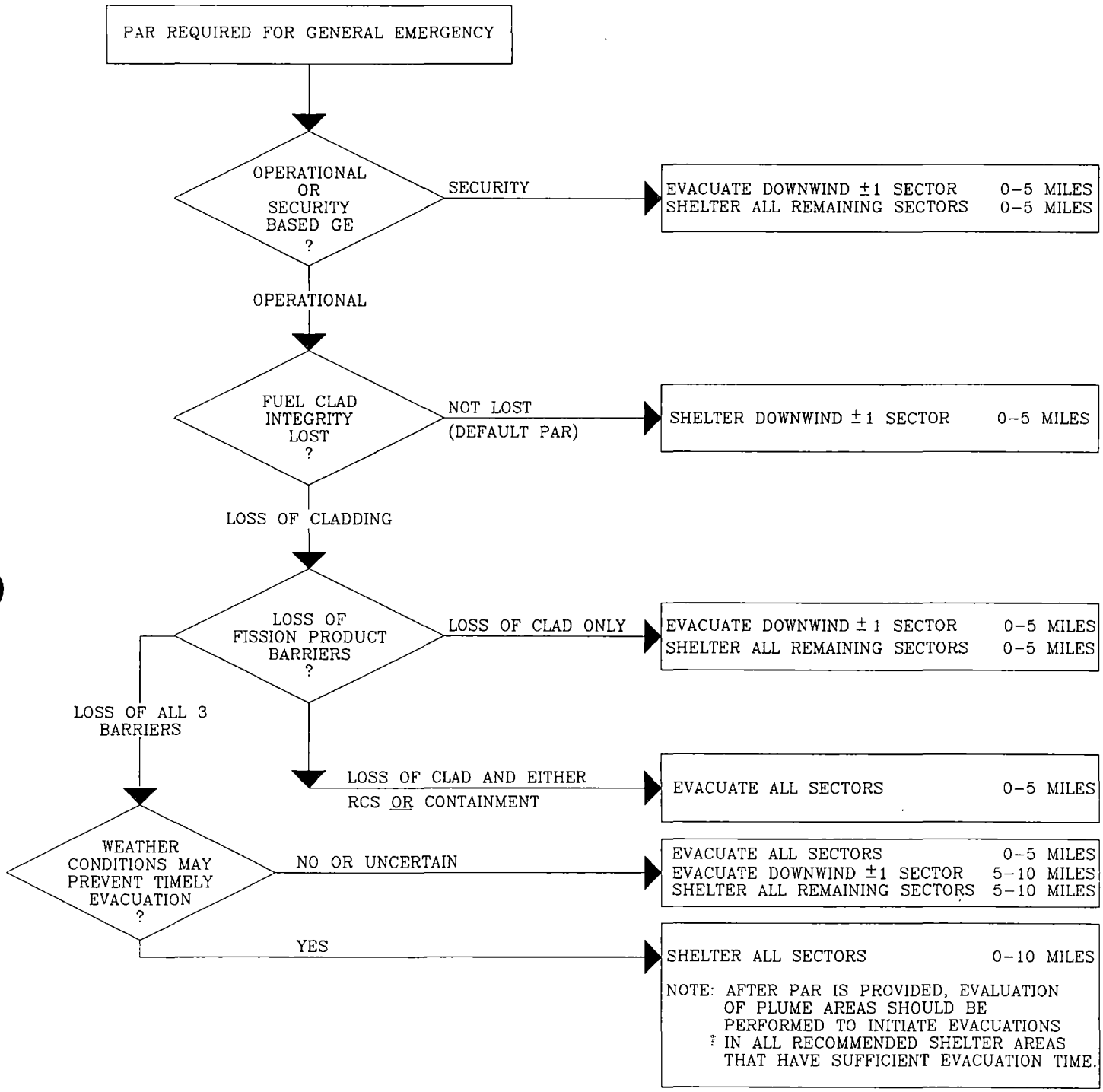
Report or LER Number _____

____ LERC 6. When no longer required send this attachment and appended documents to the Emergency Preparedness Manager (EPM).

____ EPM 7. Forward this Attachment package to the Central Technical Document Room (CTDR) for microfilming.

PREDETERMINED PROTECTIVE ACTION RECOMMENDATIONS

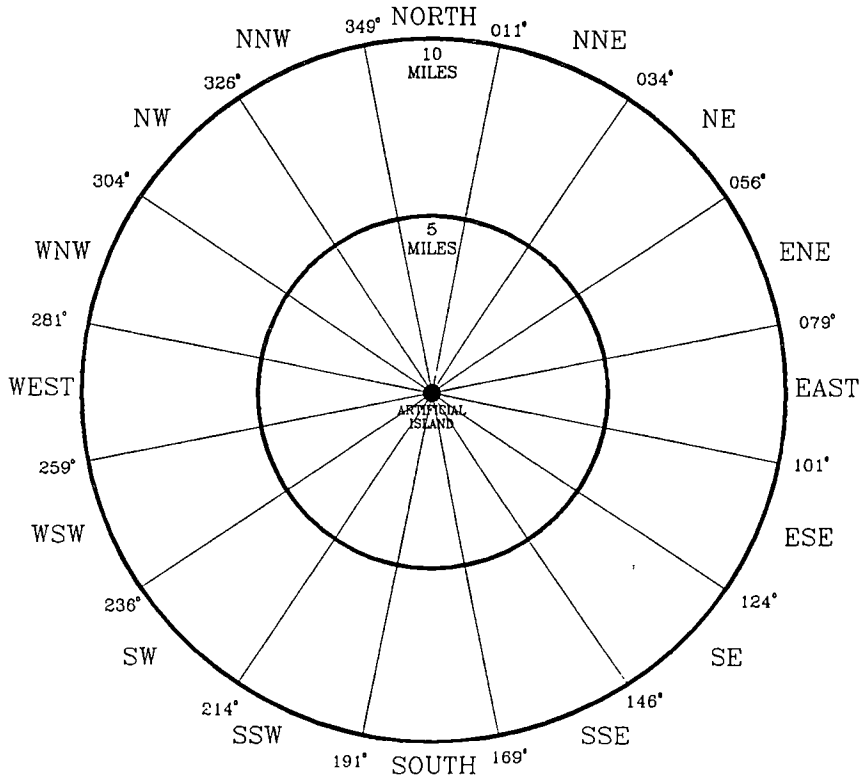
INITIAL CONDITIONS:



RECOMMENDED PROTECTIVE ACTIONS WORKSHEET

WIND DIRECTION FROM DEGREES	COMPASS	→ PAR AFFECTED SECTORS DOWNWIND ±1 SECTOR				
349 – 011	N	SSE	–	S	–	SSW
011 – 034	NNE	S	–	SSW	–	SW
034 – 056	NE	SSW	–	SW	–	WSW
056 – 079	ENE	SW	–	WSW	–	W
079 – 101	E	WSW	–	W	–	WNW
101 – 124	ESE	W	–	WNW	–	NW
124 – 146	SE	WNW	–	NW	–	NNW
146 – 169	SSE	NW	–	NNW	–	N
169 – 191	S	NNW	–	N	–	NNE
191 – 214	SSW	N	–	NNE	–	NE
214 – 236	SW	NNE	–	NE	–	ENE
236 – 259	WSW	NE	–	ENE	–	E
259 – 281	W	ENE	–	E	–	ESE
281 – 304	WNW	E	–	ESE	–	SE
304 – 326	NW	ESE	–	SE	–	SSE
326 – 349	NNW	SE	–	SSE	–	S

NOTE: CONSIDER ADDING A SECTOR TO THE PAR IF THE WIND DIRECTION (FROM) IS WITHIN ±3° OF A SECTOR BOUNDARY LINE.



INITIAL CONTACT MESSAGE FORM

I. THIS IS _____, COMMUNICATOR IN THE
(NAME)

____ CONTROL ROOM
____ TECHNICAL SUPPORT CENTER
____ EMERGENCY OPERATIONS FACILITY

AT THE **SALEM** NUCLEAR GENERATING STATION, Unit No.___

IIa. ☐ THIS IS NOTIFICATION OF A **GENERAL EMERGENCY** WHICH WAS DECLARED AT _____ ON _____.
(TIME - 24 HOUR CLOCK) (DATE)

ECG SECTION _____ INITIATING CONDITION _____

DESCRIPTION OF EVENT: _____

_____

_____

IIb. ☐ THIS IS NOTIFICATION OF A **PROTECTIVE ACTION RECOMMENDATION UPGRADE** WHICH WAS MADE AT _____ ON _____.
(TIME - 24 HOUR CLOCK) (DATE)

Reason for PAR upgrade: _____

_____

III. ☐ THERE IS NO RADIOLOGICAL RELEASE IN PROGRESS.
☐ THERE IS A RADIOLOGICAL RELEASE IN PROGRESS.
} see NOTE for release definition

33 FT. LEVEL WIND SPEED: _____ (MPH) WIND DIRECTION (FROM): _____ (DEGREES)

IV.

	Sector(s)	Distance-Miles
☐ WE RECOMMEND **EVACUATION** AS FOLLOWS	_____	_____
	_____	_____
☐ WE RECOMMEND **SHELTERING** AS FOLLOWS	_____	_____
	_____	_____

_____
EC Initials
(EC Approval to Transmit ICMF)

NOTE: Radiological Release is defined as: Plant Effluent > Tech Spec Limit of 2.42E+05 uCi/sec Noble Gas or 2.1E+01 uCi/sec I-131.

ATTACHMENT 5

(RESERVED)

CONTROL COPY # 10

ATTACHMENT 6

DESIGNATED COMMUNICATOR (CM1) COMMUNICATIONS LOG

☐ UNUSUAL EVENT

☐ ALERT

☐ SITE AREA EMERGENCY

☐ PROTECTIVE ACTION RECOMMENDATION (PAR) UPDATE (FOR SITE AREA EMERGENCY)

Table of Contents

Instructions

1. This is a permanent record.
2. Initial items implemented.

_____
Name

_____
Date Time

CR TSC EOF
Location (circle one)

I. DESIGNATED COMMUNICATOR (CM1/TSC1/EOF1) INSTRUCTIONS

Initials

> NOTE
>
> Implement a new working copy of this attachment for changes in Emergency Classification as directed by the Emergency Coordinator (EC).

_____ CM1/TSC1 /EOF1

1. Obtain approved Initial Contact Message Form (ICMF) from the Emergency Coordinator (EC). Telephonically provide ICMF to contacts on the Communications Log (pages 5 through 8). See step 10 for pager (beeper) activation instructions.

> NOTE
>
> Turnover of notifications responsibility may only occur after the Emergency Coordinator position transfers and a copy of the ICMF is available to the oncoming communicator (TSC or EOF).

_____ CM1/TSC1 /EOF1

2. Initiate followup transmission of ICMF on telecopier Group A if not done previously.

_____ CM1/TSC1

3. When the TSC (or EOF) is ready to assume notifications responsibilities, discuss the following with your relief.

   a. Organizations/Individuals notified of the current level of Emergency.
   b. Provide, as appropriate, names and locations (numbers) of those contacted for updates/changes.

_____ CM1

4. Assist the Secondary Communicator (CM2) in the transmission of data forms using the telecopier.

INITIALS

CAUTION

YOU ARE NOT AUTHORIZED TO RELEASE ANY INFORMATION CONCERNING THE EMERGENCY TO THE NEWS MEDIA.

_____ CM1/TSC1 /EOF1

5. Refer request for information from the News Media or any other incoming phone calls (other than verification call backs) to the CM2.

_____ TSC1/EOF1

6. When all notifications are completed, assist the TSC2 (EOF2) in maintaining required status boards or as directed by the Emergency Preparedness Advisor (EPA).

_____ CM1

7. If telecopier is not working properly, request assistance from the Emergency Preparedness Advisor in the TSC (NETS 5113).

_____ CM1/TSC1 /EOF1

8. When the Emergency has been terminated or reduced in classification, obtain the approved EMERGENCY TERMINATION/REDUCTION FORM, from the EC. Implement notifications using the Communications Log and note contacts in the Event Reduction Column (time limits do not apply).

_____ CM1/TSC1 /EOF1

9. When the emergency is terminated or you are relieved of duty, forward this and all other completed documents to the SNSS/EDO/ERM.

_____ CM1/TSC1 /EOF1

10. If required to activate an individual's pager, perform the following:

    A. Dial the pager number of the individual you are trying to contact listed in the Communications Log.

CAUTION

When entering the phone number where the pager holder should call you back at, make sure you provide the complete number of a phone that is not in use; and make sure you DO NOT enter a NETS phone number.

B. When you hear "Beep, Beep, Beep" you should enter the phone number that you want the pager holder to call you on. This is done using the touch-tone key pad on the phone you are on.

C. Hang up the phone. Pager holder should call you back on the phone number you provided within 5 minutes (approximately).

	COMMUNICATIONS LOG	INITIAL NOTIFICATION			EVENT REDUCTION
TIME LIMIT	CLASSIFICATION: _____ (UE/A/SAE) ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME
15 MIN.	**DELAWARE STATE POLICE/DEMA** Primary: NETS 5406/5407 Secondary: 302-739-5851(SP) or 302-836-7250 (DEMA) Backup: NAWAS	Call Back:			
	NOTES: IF DELAWARE IS CONTACTED, PROCEED WITH NEW JERSEY.		IF UNABLE TO CONTACT DELAWARE STATE (above), CONTACT BOTH OF THE FOLLOWING.		
	NEW CASTLE COUNTY Primary: NETS 5408 Secondary: 302-738-3131				
	KENT COUNTY Primary: NETS 5409 Secondary: 302-678-9111				
15 MIN.	**NEW JERSEY STATE POLICE/OEM** Primary: Nets 5400 Secondary: 882-2000 Backup: EMRAD	Call Back:			
	NOTES: IF NEW JERSEY IS CONTACTED, PROCEED TO NEXT PAGE.		IF UNABLE TO CONTACT NEW JERSEY STATE (above), CONTACT ALL OF THE FOLLOWING.		
	SALEM COUNTY Primary: NETS 5402 Secondary: 769-2959				
	CUMBERLAND COUNTY Primary: NETS 5403 Secondary: 455-8770				
	U. S. COAST GUARD (Speak Only With Duty Desk) Primary: 215-271-4940 Secondary: 215-271-4800				

COMMUNICATIONS LOG		INITIAL NOTIFICATION			EVENT REDUCTION
TIME LIMIT	CLASSIFICATION: _____ UE/A/SAE) ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME
30 MIN.	**EMERGENCY DUTY OFFICER(EDO)** Primary: Refer to Roster Secondary: (Contact One) Chris Bakken Office: 2613 Home: 609-769-5420 Pager: 478-5016 Car: 609-230-8814 Nick Conicella Office: 2124 Home: 609-223-0975 Pager: 478-5035 Car: 609-230-8164 Jay Laughlin Office: 2907 Home: 609-935-8545 Pager: 478-5004 Car: 609-230-7995 Dennis McCloskey Office: 5021 Home: 302-328-8520 Pager: 573-1417 Car: 302-563-5008	*NOTE			
30 MIN.	**LAC TOWNSHIP** Primary: NETS 5404 Secondary:935-7300				
30 MIN.	**PUBLIC INFORMATION MANAGER** Nuclear (Contact One) Trish DuBois Office: 1186 Home: 609-769-2454 Pager: 223-3012 Chris Florentz Office: 1002 Home: 610-543-0729 Pager: 478-5367 Nancy Sooy Office: 1007 Home: 609-795-6831 Pager: 223-3393	**			

* NOTIFY the **EDO** for Unusual Event ONLY.

** After ENC activation, notify the ENC and read the ICMF to the ENC Manager (NETS - 5300 or 273-1961).

	COMMUNICATIONS LOG	INITIAL NOTIFICATION			EVENT REDUCTION
TIME LIMIT	CLASSIFICATION: ~~(UE/A/SAE)~~ ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME

NRC OPS CENTER COMMUNICATION INSTRUCTIONS:

1. Obtain the approved NRC Data Sheet from Communicator #2.
2. Read both the ICMF and NRC Data Sheet to the NRC Operations Center.
   (Fill in Communications Log at bottom of this page)
3. IF the NRC is requesting additional information concerning the event,
   THEN obtain assistance from the Control Room (TSC/EOF) staff.
4. IF requested by the NRC, maintain an open phone line and request Communicator #2 to complete any remaining calls on Communicator #1 log.

NOTE:

As manpower permits, the Emergency Coordinator may assign an additional communicator (preferably an RO or SRO) to provide continuous updates to the NRC. The assignment of an additional communicator should not be made if personnel being considered are required to mitigate the event or to complete high priority Emergency Response functions.

60 MIN.	**NRC OPERATIONS CENTER** (ICMF & NRC Data Sheet) Primary: (ENS) 301-816-5100 Secondary: 301-951-0550				

COMMUNICATIONS LOG — INITIAL NOTIFICATION — EVENT REDUCTION

TIME LIMIT	CLASSIFICATION: ~~(UE/A/SAE)~~ ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME
75 MIN.	**NRC RESIDENTS** (Contact One) Charlie Marschall Office: 1078 or 935-3850 or 935-5151 Home: 610-444-0181 Pager: 772-4742 Joe Schoppy Office: 1041 or 935-3850 or 935-5151 Home: 609-384-1365 Pager: 772-4742 Todd Fish Office: 1017 or 935-3850 or 935-5151 Home: 302-654-6612 Pager: 772-4742				
90 MIN	**EXTERNAL AFFAIRS** (Contact One) Max LeFevre Office: 1243 Home: 609-451-9324 Pager: 478-5094 Ross Bell Office: 1239 Home: 609-455-7435 Pager: 478-5213 Ed Johnson Office: 1486 Home: 609-678-2257 Pager: 478-5040	**			
90 MIN.	**AMERICAN NUCLEAR INSURERS** (ANI) 203-561-3433	*			

* Not Required for Unusual Events to Notify ANI.

** Not Required <u>after</u> the EOF is <u>activated</u>.

CONTROL COPY # 101

ATTACHMENT 7

DESIGNATED COMMUNICATOR (CM1) COMMUNICATIONS LOG

☐ GENERAL EMERGENCY

☐ PROTECTIVE ACTION RECOMMENDATION (PAR) UPDATE

Table of Contents

Instructions

1. This is a permanent record.
2. Initial items implemented.

_____
Name

_____
Date Time

CR TSC EOF
Location (circle one)

I. DESIGNATED COMMUNICATOR (CM1/TSC1/EOF1) INSTRUCTIONS

Initials

> NOTE
>
> Implement a new working copy of this attachment for changes in Emergency Classification as directed by the Emergency Coordinator (EC).

> NOTE
>
> For 15 minute notifications use NETS X5555 conference call (separate contact required for Coast Guard).

_____ CM1/TSC1 /EOF1

1. Obtain approved Initial Contact Message Form (ICMF) from the Emergency Coordinator (EC). Telephonically provide ICMF to contacts on the Communications Log (pages 5 through 7). See step 10 for pager (beeper) activation instructions.

> NOTE
>
> Turnover of notifications responsibility may only occur after the Emergency Coordinator position transfers and a copy of the ICMF is available to the oncoming communicator (TSC or EOF).

_____ CM1/TSC1 /EOF1

2. Initiate followup transmission of ICMF on telecopier Group A if not done previously.

_____ CM1/TSC1

3. When the TSC (or EOF) is ready to assume notifications responsibilities, discuss the following with your relief.

   a. Organizations/Individuals notified of the current level of Emergency.
   b. Provide, as appropriate, names and locations (numbers) of those contacted for updates/changes.

Initials

_____ CM1

4. Assist the Secondary Communicator (CM2) in the transmission of data forms using the telecopier.

> **CAUTION**
>
> **YOU ARE NOT AUTHORIZED TO RELEASE ANY INFORMATION CONCERNING THE EMERGENCY TO THE NEWS MEDIA.**

_____ CM1/TSC1 /EOF1

5. Refer request for information from the News Media or any other incoming phone calls (other than verification call backs) to the CM2 (TSC2/EOF2).

_____ TSC1/ EOF1

6. When all notifications are completed, assist the TSC2 (EOF2) in maintaining required status boards or as directed by the Emergency Preparedness Advisor (EPA).

_____ CM1

7. If telecopier is not working properly, request assistance from the Emergency Preparedness Advisor in the TSC (NETS 5113).

_____ CM1/TSC1 /EOF1

8. When the Emergency has been terminated or reduced in classification, obtain the approved EMERGENCY TERMINATION/REDUCTION FORM, from the EC. Implement notifications using the Communications Log and note contacts in the Event Reduction Column (time limits do not apply).

_____ CM1/TSC1 /EOF1

9. When the emergency is terminated or you are relieved of duty, forward this and all other completed documents to the SNSS/EDO/ERM.

Initials

_____ 10. If required to activate an individual's pager, perform the following:
CM1/TSC1
/EOF1

A. Dial the pager number of the individual you are trying to contact listed in the Communications Log.

> **CAUTION**
>
> **When entering the phone number where the pager holder should call you back at, make sure you provide the complete number of a phone that is not in use; and make sure you DO NOT enter a NETS phone number.**

B. When you hear "Beep, Beep, Beep" you should enter the phone number that you want the pager holder to call you on. This is done using the touch-tone key pad on the phone you are on.

C. Hang up the phone. Pager holder should call you back on the phone number you provided within 5 minutes (approximately).

COMMUNICATIONS LOG — INITIAL NOTIFICATION — EVENT REDUCTION

TIME LIMIT	CLASSIFICATION: General Emergency ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME
15 MIN.	**NEW JERSEY STATE POLICE/OEM** Primary: Nets 5400 Secondary: 882-2000 Backup: EMRAD	Call Back:			
	DELAWARE STATE POLICE/DEMA Primary: Nets 5406/5407 Secondary: 302-739-5851 (SP) or 302-836-7250 (DEMA) Backup: NAWAS	Call Back:			
	LAC TOWNSHIP Primary: Nets 5404 Secondary: 935-7300	Call Back:			
	SALEM COUNTY Primary: NETS 5402 Secondary: 769-2959 Backup: EMRAD	Call Back:			
	CUMBERLAND COUNTY Primary: NETS 5403 Secondary: 455-8770 Backup: EMRAD	Call Back:			
	NEW CASTLE COUNTY Primary: NETS 5408 Secondary: 302-738-3131	Call Back:			
	KENT COUNTY Primary: NETS 5409 Secondary: 302-678-9111	Call Back:			
15 MIN.	**U.S. COAST GUARD** (Speak Only With Duty Desk) Primary: 215-271-4940 Secondary: 215-271-4800	Call Back:			

Reminder: Use NETS 5555 (conference call) for 15 min. notification(s) except for U.S. Coast Guard.

NOTES: _____

COMMUNICATIONS LOG — INITIAL NOTIFICATION — EVENT REDUCTION

TIME LIMIT	CLASSIFICATION: General Emergency ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME
30 MIN.	**PUBLIC INFORMATION MANAGER-NUCLEAR** (Contact One) Trish DuBois Office: 1186 Home: 609-769-2454 Pager: 223-3012 Chris Florentz Office: 1002 Home: 610-543-0729 Pager: 478-5367 Nancy Sooy Office: 1007 Home: 609-795-6831 Pager: 223-3393	**			

NRC OPS CENTER COMMUNICATION INSTRUCTIONS:

1. Obtain the approved NRC Data Sheet from Communicator #2.
2. Read both the ICMF and NRC Data Sheet to the NRC Operations Center.
   (Fill in Communications Log at bottom of this page)
3. IF the NRC is requesting additional information concerning the event,
   THEN obtain assistance from the Control Room (TSC/EOF) staff.
4. IF requested by the NRC, maintain an open phone line and request Communicator #2 to complete any remaining calls on Communicator #1 log.

NOTE:

As manpower permits, the Emergency Coordinator may assign an additional communicator (preferably an RO or SRO) to provide continuous updates to the NRC. The assignment of an additional communicator should not be made if personnel being considered are required to mitigate the event or to complete high priority Emergency Response functions.

60 MIN.	**NRC OPERATIONS CENTER** (ICMF & NRC Data Sheet) Primary: (ENS) 301-816-5100 Secondary: 301-951-0550				

** After ENC activation, NOTIFY the ENC and read the ICMF to the ENC Manager (NETS - 5300 or 609-273-1961)

COMMUNICATIONS LOG — INITIAL NOTIFICATION — EVENT REDUCTION

TIME LIMIT	CLASSIFICATION: General Emergency ORGANIZATIONS/INDIVIDUALS	NAME OF CONTACT	DATE/ TIME	CALLER	NAME OF CONTACT/ TIME
75 MIN.	**NRC RESIDENTS** (Contact One) Charlie Marschall Office: 1078 or 935-3850 or 935-5151 Home: 610-444-0181 Pager: 772-4742 Joe Schoppy Office: 1041 or 935-3850 or 935-5151 Home: 609-384-1365 Pager: 772-4742 Todd Fish Office: 1017 or 935-3850 or 935-5151 Home: 302-654-6612 Pager: 772-4742				
90 MIN	**EXTERNAL AFFAIRS** (Contact One) Max LeFevre Office: 1243 Home: 609-451-9324 Pager: 478-5094 Ross Bell Office: 1239 Home: 609-455-7435 Pager: 478-5213 Ed Johnson Office: 1486 Home: 609-678-2257 Pager: 478-5040	**			
90 MIN.	**AMERICAN NUCLEAR INSURERS** (ANI) 203-561-3433				

** Not Required <u>After</u> the EOF is <u>Activated.</u>

CONTROL COPY # 101

ATTACHMENT 8

SECONDARY COMMUNICATOR (CM2/TSC2/EOF2) LOG
UE, ALERT, SAE, GE

Table of Contents

Instructions

1. This is a permanent record. Additional forms are available.

2. Initial items implemented.

NOTE
If Event Classification is changed, retain this copy, but implement a new copy of Att. 8.

Event Classification

Name

Date Time

CR TSC EOF
(circle one)

I. SECONDARY COMMUNICATOR LOG SHEET

A. NOTIFICATIONS

Initials

_____ CM2 1. For an Unusual Event classification, notify the PSE&G Security Supervisor (X2222).

_____ CM2 2. For Alert or higher event classification, notify **Security Systems Operations Supervisor** (X2223) to implement EPIP 901, Onsite Security Response and EPIP 903, Opening Emergency Operations Facility and Emergency News Center, if not already initiated.

_____ CM2 3. Notify the **Shift Radiation Protection Technician** (X2644) of the emergency at Salem Unit 1 (2) and direct SRPT to implement EPIP 301S, RPT Onshift Response if not already implemented.

_____ CM2 4. Request that the Shift Supervisor initiate a call out of a Nuclear Control Operator if needed to fulfill Technical Specification requirements.

_____ CM2 5. Within 60 minutes of an Alert or higher Event Classification, or as requested by the NRC Operations Officer or SNSS, activate the Emergency Response Data System (ERDS) as follows:

a. Proceed to step "g" if problems are encountered during the ERDS activation process.

b. Proceed to a SPDS terminal in the affected Unit's Control Room and press the **<UNIT MASTER MENU> key**.

c. Press the **<ERDS> key**; the ERDS menu will appear.

d. Press the **<SHIFT>** and **<1> keys** to select "ACTIVATE ERDS COMMUNICATION".

e. When prompted to confirm, type a **<Y>** and then, press the **<RETURN>** key to execute; "ERDS ACTIVATION ACCEPTED" will be displayed.

A. NOTIFICATIONS (cont'd)

Initials

f. Observe activation sequence message on lower half of screen next to ERDS LINK STATUS:

DIALING
TRANSMITTING DATA

> NOTE
>
> If ERDS Communications to the NRC is interrupted, the ERDS computer will attempt restart for up to 5 tries and will display, "Reconnect in progress". No Operator action is required.

g. If ERDS activation is not successful, (i.e., ERDS LINK STATUS display would indicate; "ERROR - PSE&G TO TERMINATE" OR "ERROR - ERDS CROSSTALK FAILURE" OR ERDS COMPUTER STATUS display would indicate; "ERDS COMPUTER NOT RESPONDING"), request support from the Emergency Preparedness Representative. Refer to ECG Attachment 9 for phone numbers.

h. SPDS terminal can now be used as needed.

CM2/TSC2 /EOF2

6. Refer to Section C, "Incoming Calls", if/when calls are received from State Officials, News Media, or from the NRC for ERDS termination.

B. DATA COLLECTION/TRANSMISSION

Initials

> NOTE:
>
> The approved Station Status Checklist (SSCL) (both pages) should be transmitted every 30 minutes.
>
> The approved NRC Data Sheet should be provided to the Designated Communicator (CM1) as soon as possible, to allow transmission within 60 minutes of event classification to the NRC.

CM2/TSC2 /EOF2 — 1. Complete the Operational Information portion of the SSCL (page 14) with assistance from a licensed operator as needed.

CM2/TSC2 /EOF2 — 2. Obtain the completed Radiological Information portion, page 2 of the SSCL (page 15 of this attachment) from the Radiation Protection Technician (SRPT) in the Control Room, the RAC, or RSM.

CM2/TSC2 /EOF2 — 3. Provide the completed SSCL to the EC or designee (TSS, SSM, RAC, RSM) for review and approval.

> NOTE
>
> Fax machine (telecopier) trouble-shooting checklist is mounted nearby. Backup (alternate) Fax is available at the Work Control Center.

CM2/TSC2 /EOF2 — 4. Transmit approved SSCL to designated agencies. The SSCL should be transmitted every thirty (30) minutes in its current status of completion, once the first one is transmitted. (See Section C, page 7 if States call for information).

a. Use telecopier transmission Group B.
b. If telecopier is not operable, then transmit verbally using phone lines.

NJ-BNE	609-984-7700
DEMA	302-834-4531

B. DATA COLLECTION/TRANSMISSION (cont)

Initials

_____ CM2/TSC2 /EOF2	5. Complete the NRC Data Sheet (pgs. 12 & 13) with assistance from the SRPT as needed.
_____ CM2/TSC2 /EOF2	6. Provide NRC Data Sheet to the EC for completion and approval.
_____ CM2/TSC2 /EOF2	7. Provide the approved NRC Data Sheet to CM1 for transmittal to the NRC.
_____ CM2/TSC2 /EOF2	8. Transmit a copy of the NRC Data Sheet to the NJ BNE, DEMA, TSC and EOF using telecopier Group B.

NOTE

NRC Data Sheet transmission to the State Agencies is supplemental information for reference only and is NOT an official notification. SSCL transmission takes priority and is the official Followup Notification (every 30 minutes).

_____ CM2/TSC2 /EOF2	9. Immediately provide SSCL update to the states if a significant change in station status occurs, between regular updates.
_____ CM2/TSC2	10. When SSCL responsibility has transferred to the TSC/EOF, provide the TSC/EOF Communicator with the state telephone numbers if previously obtained in Section C. (page 7 & 8)
_____ TSC2/EOF2	11. Verify availability of "OPERATIONAL STATUS BOARD FORM" on SPDS by depressing **<UNIT MASTER MENU>** then **<SHIFT 9>**. If data is not available, contact the CM2 in the Control Room and request completion and transmittal of OPERATIONAL STATUS BOARD FORM every 15 minutes.

B. DATA COLLECTION/TRANSMISSION (cont)

Initials

> NOTE
>
> If communications responsibilities have been turned over to TSC/EOF Communicators, CM2 should maintain responsibility for accomplishing Steps 12, 13, and 15 of this section.

_____ CM2

12. If requested by the TSC or EOF Communicator, complete the OPERATIONAL STATUS BOARD FORM (page 11) every 15 minutes as follows:

    a. Ensure data is reviewed by a licensed operator.
    b. Transmit a copy to the TSC/EOF. (Use telecopier Group C when only TSC is activated. Use telecopier Group D after EOF activation.)

_____ CM2

13. For Alert or higher classification, complete the MAJOR EQUIPMENT AND ELECTRICAL STATUS BOARD FORM (page 10).

    a. Ensure data is reviewed by a licensed operator.
    b. Provide a copy to the OSC Coordinator.
    c. Transmit a copy to the TSC/EOF.
    d. Provide an updated status when requested, when a significant change in plant status occurs, or upon an escalation of the emergency. (Use telecopier Group C when TSC is activated. Use telecopier Group D after EOF activation).

_____ TSC/EOF2

14. Ensure OPERATIONAL STATUS BOARD and MAJOR EQUIPMENT and ELECTRICAL STATUS BOARD are updated as follows:

    a. For OPERATIONAL STATUS BOARD use data from SPDS display which is accessed by depressing **<UNIT MASTER MENU>** then **<SHIFT 9>** or data received from the Control Room.
    b. For MAJOR EQUIPMENT and ELECTRICAL STATUS BOARD use data received from the Control Room.

_____ CM2/TSC2 /EOF2

15. When the emergency is terminated, forward this and all other completed documents to the EC.

C. INCOMING CALLS

STATE OFFICIALS

Initials

_____ CM2/TSC2 /EOF2

1. Upon a request for Emergency Information from the Delaware Emergency Management Agency (DEMA) perform the following:

   a. Read the EC Approved SSCL in its current state of completion.

   b. Obtain name of caller and phone number to which follow up SSCL information should be directed.

   Contact Name(DEMA) _____ Phone No. _____

_____ CM2/TSC2 /EOF2

2. Upon request for Emergency Information from the NJ Bureau of Nuclear Engineering (BNE), or the Department of Environmental Protection (DEP), or the NJ State Police Office of Emergency Management (OEM), perform the following:

   a. Verify that caller is listed on the Designated State Officials List (see below)

   b. Read the EC approved SSCL, in its current state of completion.

   c. If the caller is from the NJ BNE, then also provide the approved NRC Data Sheet Event Description information if available.

   d. Obtain name of caller and telephone number to which follow up SSCL should be directed.

   Contact Name (NJDEP) _____ Phone No. _____

NEW JERSEY DESIGNATED OFFICIALS (BNE or NJDEP)

____	Cannuli, Vince	____	Nagy, Louis
____	Cowperthwait, Dan	____	Nicholls, Gerald
____	DePierro, Nick	____	Pinney, Rich
____	DiNucci, Nicholas	____	Quinn, Maryanne
____	Gardner, Patricia	____	Shashidhara, Shantha
____	Kolesnik, Tom	____	Shinn, Robert
____	Lipoti, Jill	____	Tosch, Kent
____	Mulligan, Patrick	____	Vann, David
		____	Zannoni, Dennis

C. **INCOMING CALLS (cont)**

OFFICE OF EMERGENCY MANAGEMENT (OEM), NEW JERSEY

____ Vona, Patrick (Major)
____ Christiansen, Jon
____ Hayden, Kevin (Capt.)
____ Thompson, John (Lt.)
____ Davies, Tom (Capt.)
____ OEM Duty Officer, or designee_____ (name)
____ Duty Operations Chief, _____ (name)
____ Civilian Duty Officer, _____ (name)
____ Enlisted Duty Officer, _____ (name)

NEWS MEDIA

INITIALS

> **CAUTION**
> **YOU ARE NOT AUTHORIZED TO RELEASE ANY INFORMATION CONCERNING THE EMERGENCY TO THE NEWS MEDIA.**

CM2/TSC2
EOF2

3. Refer request for information from the News Media to the Emergency News Center (ENC) or Nuclear Communications Officer.

   If the ENC is activated **(Alert or Higher)** say only;

   "You are requested to contact the MEDIA INFORMATION OPERATOR at any of the following phone numbers (609)273-0188, 0282, 0386, 0479, or 0586."

   If ENC is not activated **(Unusual Event)** provide only the following information:

   "You are requested to contact the NUCLEAR COMMUNICATIONS OFFICE at the following phone numbers (609)339-1001, 1006, or 1002."

ERDS TERMINATION

CM2

4. When directed by the NRC, terminate Emergency Response Data System (ERDS) transmission as follows:

   a. Return to the SPDS terminal of the affected Unit's Control Room and press the **<UNIT MASTER MENU> key.**

   b. Press the **<ERDS> key;** the ERDS menu will appear.

   c. Press the **<SHIFT> and <2> keys** to select "TERMINATE ERDS COMMUNICATION".

C. INCOMING CALLS (cont)

d. When prompted to confirm, type a **<Y>** and then, press the **<RETURN> key** to execute; "ERDS TERMINATION ACCEPTED" will display.

e. Observe deactivation sequence messages on the lower half of the screen next to ERDS LINK STATUS:

TERMINATING
NOT ACTIVATED

f. Inform the SNSS when ERDS termination is successful. (i.e., ERDS LINK STATUS will indicate: NOT ACTIVATED).

g. Contact the Emergency Preparedness Advisor in the TSC if problems are encountered with termination.

SALEM UNIT ____

MAJOR EQUIPMENT AND ELECTRICAL STATUS

Y = IN SERVICE
N = OUT OF SERVICE
CIRCLE UNAVAILABLE EQUIP.

DATE: _____
UPDATE TIME: _____

COOLING SYSTEMS		ELECTRICAL FEED	Y/N
AUX FD PUMPS	1	A1D	
	2	B1D	
	3	STM.	
SERVICE WATER PUMPS	1	3D	
	2	8D	
	3	B3D	
	4	B8D	
	5	3D	
	6	8D	
COMP. COOLING PUMPS	1	A10D	
	2	B10D	
	3	C10D	
REACTOR COOLANT PUMPS	1	H4D	
	2	E4D	
	3	F4D	
	4	G4D	
COND. PUMPS	1	H1D	
	2	E1D	
	3	F1D	
		(U1) / (U2)	
CIRC WATER PUMPS	1a	2AD/H7D	
	1b	7BD/F7D	
	2a	3AD/E7D	
	2b	6BD/G7D	
	3a	4AD/E3D	
	3b	5BD/G3D	

ECCS SYSTEMS		ELECTRICAL FEED	Y/N
CHARGING PUMPS	1	B9D	
	2	C9D	
	3	A7X	
SAFETY INJ PUMPS	1	A5D	
	2	C5D	
RHR PUMPS	1	A7D	
	2	B7D	

ELECTRICAL STATUS		Y/N	
IS OFFSITE AC POWER AVAILABLE?			
EMER. DIESEL		RUN	LOAD
EDG	A		
	B		
	C		
#3 GAS TURBINE			
ELEC DISTRIBUTION AVAILABLE?		Y/N	
VITAL BUS	A		
	B		
	C		
GROUP BUS	E		
	F		
	G		
	H		

COMMENTS:

CONT. CONTROL SYSTEMS		ELECTRICAL FEED	Y/N
CONT. SPRAY PUMPS	1	A2D	
	2	C2D	

CFCU		HI		LOW
1	A3X A4X		A2X	
2	B3X B4X		B2X	
3	C3X C4X		C2X	
4	B7X B8X		B6X	
5	C7X C8X		C6X	

			Y/N
IODINE REMOVAL	1	G7X	
	2	E7X	
H^2 RECOM	1	A15X	
	2	B15X	

MISC. EQUIPMENT		Y/N
FIRE PUMPS (DIESEL)	1	
	2	
STATION AIR COMP.		Y/N
	1	1H6D
	2	2G1D
	3	1G1D
EMERGENCY AIR COMP.		Y/N
	1	1C14X
	2	2C14X

1

LICENSED OPERATOR REVIEW: _____
INITIALS

OPERATIONAL STATUS BOARD - SALEM

UPDATE: TIME ____ DATE ____

UNIT #: ____

I. EMERGENCY CORE COOLING SYSTEM

CENT. CHRG. PUMP FLOW		GPM
SI PUMP FLOW # _1		GPM
SI PUMP FLOW # _2		GPM
RHR PUMP FLOW # _1		GPM
RHR PUMP FLOW # _2		GPM
RWST LEVEL		FT

II. CONTAINMENT

CONT. PRESSURE		PSIG
CONT. TEMP (AVG)		F
CONT. H_2 CONCEN.		%
CONT. SUMP LEVEL		%
CONT. RAD (HI RANGE)		
_R44A		R/hr
_R44B		R/hr

III. REACTOR COOLANT SYSTEM

# OF RCP'S RUNNING		
RVLIS (FULL RANGE)		%
THERMOCOUPLE (HOTTEST)		F
# THERMOCOUPLES >1200 F		
Tc LOOP _1		F
Tc LOOP _2		F
Tc LOOP _3		F
Tc LOOP _4		F
* Tave (AUCTIONEERED)		F
PZR/RCS PRESSURE		PSIG
PZR LEVEL (HOT)		%
Th LOOP _1		F
Th LOOP _2		F
Th LOOP _3		F
Th LOOP _4		F
RX PWR/NEUTRON FLUX		%/A/CPS
SUBCOOLING MARGIN		F

IV. C.V.C.S.

LETDOWN FLOW		GPM
CHARGING FLOW		GPM

V. SECONDARY COOLANT SYSTEM

NO. _1 SG LEVEL		% (NR or WR)
NO. _2 SG LEVEL		% (NR or WR)
NO. _3 SG LEVEL		% (NR or WR)
NO. _4 SG LEVEL		% (NR or WR)
NO. _1 SG PRESS.		PSIG
NO. _2 SG PRESS.		PSIG
NO. _3 SG PRESS.		PSIG
NO. _4 SG PRESS.		PSIG
NO. _1 SG FEED FLOW		% or LBS/HR
NO. _2 SG FEED FLOW		% or LBS/HR
NO. _3 SG FEED FLOW		% or LBS/HR
NO. _4 SG FEED FLOW		% or LBS/HR
AFST LEVEL		%

VI. MISC. TANKS LEVEL

WASTE HOLD-UP TANK # _1		%
WASTE HOLD-UP TANK # _2		%
WASTE MONITOR HUT		%

VII. SSCL INFORMATION

	YES	NO
OFFSITE POWER AVAILABLE?		
TWO OR MORE DIESELS AVAILABLE?		
DID ECCS ACTUATE?		
IS THE CONTAINMENT ISOLATED?		
IS IT CAPABLE OF BEING ISOLATED?		

VIII. SIGNIFICANT PLANT EVENTS

* WHEN NO RCP'S ARE RUNNING, Tave ON THE CONTROL CONSOLE IS INVALID.

LICENSED OPERATOR REVIEW ____ INITIALS

NRC DATA SHEET (Page 1 of 2)

NOTIFICATION TIME	FACILITY: SALEM GENERATING STATION	CALLER'S NAME	
EVENT DATE	EVENT TIME EASTERN TIME ZONE	POWER / MODE BEFORE EVENT	POWER / MODE AFTER EVENT

EVENT CLASSIFICATION (Check One)

☐	GENERAL EMERGENCY	☐	ALERT	☐	1HR 10CFR50.72(b)(1) *( )	☐	1HR SECURITY / SAFEGUARDS
☐	SITE AREA EMERGENCY	☐	UNUSUAL EVENT	☐	4HR 10CFR50.72(b)(2) *( )	☐	TRANSPORTATION EVENT
☐	OTHER (DESCRIBE):						

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITON STATEMENT.

EVENT DESCRIPTION

Include systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc. Note anything unusual or not understood. Indicate systems and safety-related equipment that are not operational.

(Use back if more room is needed)

RCS/TUBE LEAK DATA (Complete only if event includes an RCS or SG tube leak)

LOCATION OF LEAK (e.g. SG, VALVE, PIPE, etc.) : _____

TIME & DATE LEAK STARTED: _____ (TIME) ON _____ (DATE)

LEAK RATE: _____ gpm or gpd. T/S LEAK LIMITS: _____

LAST KNOWN COOLANT ACTIVITY: PRIMARY (DEI - μCi/cc) _____ SECONDARY (GBG - μCi/cc) _____

WAS THIS LEAK A SUDDEN OR LONG-TERM DEVELOPMENT? _____

NOTIFICATIONS

ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE
NRC RESIDENT				STATE OF NEW JERSEY				STATE OF DELAWARE			
LOCAL (LAC TOWNSHIP)				OTHER GOVERNMENT AGENCIES				MEDIA / PRESS RELEASE			
MODE OF OPERATION UNTIL CORRECTED: ____				ESTIMATED RESTART DATE: _____				ADDITIONAL INFO ON PAGE 2?			

NOTE: CM1 shall provide the data on this form (both pages) when notifying the NRC after reading the ICMF.

NOTE: A copy of this form may be sent to the NJ BNE as supplemental data, FOR INFORMATION ONLY.

EC APPROVAL TO TRANSMIT

NRC DATA SHEET (Page 2 of 2)

MESSAGE DATE/TIME: _____

RADIOLOGICAL RELEASE DATA: (This section is only required to be completed if a release exceeding Tech Specs is in progress or has already occurred).

Check ✓ correct statements and provide to the NRC.

___ There is a gaseous release above Tech Spec limits in progress (Tech Spec Limit: Noble Gas = 2.42E+05 μCi/sec).
___ There is an Iodine release above Tech Spec limits in progress (Tech Spec Limit: Iodine = 2.10E+01 μCi/sec).
___ There is a liquid release above Tech Spec limits in progress.
___ The release is ongoing (still above Tech Specs) at this time.
___ The release was terminated (no longer above Tech Specs) at _____hrs.
___ The release is/was planned and can be isolated.
___ The release pathway is monitored by the Radiation Monitoring System.
___ Areas evacuated onsite due to release concerns are: _____
___ Station personnel have received exposure above 10CFR20 limits.
___ Station personnel have been contaminated to an extent requiring offsite assistance to decon.

SPECIFIC RADIOLOGICAL PARAMETERS: (Provide current values)

The Noble Gas release rate (from SSCL) is: _____ μCi/sec.
The Iodine release rate (from SSCL) is: _____ μCi/sec.

RELEASE PATHWAY MONITORS: (Provide monitor reading with units and alarm setpoint only for those below listed monitors in Alarm).

Monitor # and Name	Current Reading	Alarm Setpoint
2R41D Noble Gas Effluent	_____μCi/sec	2.00E+04 μCi/sec
1R45B Mid Plant Vent Gas	_____μCi/cc	3.00E−02 μCi/cc
1R45C High Plant Vent Gas	_____μCi/cc	1.00E+02 μCi/cc
1(2)R46 Highest Steam Line (R46A thru D)	_____ mR/hr	1.00E+01 mR/hr
1(2)R15 Condenser Air Ejector	_____ cpm	_____ cpm
1(2)R19 Highest S/G Blowdown	_____cpm	_____cpm

NRC EVENT UPDATE: (Document additional information provided to NRC due to their request or as a result of plant/event status changes).

(Use back if more room is needed)

EC APPROVAL TO TRANSMIT

SSCL

STATION STATUS CHECKLIST
(Pg. 1 of 2)

Operational Information
SALEM GENERATING STATION Unit No.___ Message Date_____Time_____

Transmitted By: Name_____ Position: _____
(CR/TSC/EOF)

1. Date and Time Event Declared: Date _____ Time _____ (24 hr clock)

2. Event Classification: ☐ Unusual Event ☐ Site Area Emergency
☐ Alert ☐ General Emergency

3. Cause of Event: Primary Initiating Condition used for declaration

ECG Section _____, Initiating Condition _____
Description of the event _____
_____
_____
_____

4. Status of Reactor: ☐ Tripped/Time _____ ☐ At Power ☐ Startup
☐ Hot Standby ☐ Hot Shutdown ☐ Cold Shutdown ☐ Refuel

5. PZR/RCS Pressure _____ psig Core Exit TC _____ ° F
Hottest

6. Is offsite power available? ☐ YES ☐ NO

7. Are two or more diesel generators operable? ☐ YES ☐ NO

8. Did any Emergency Core Cooling Systems actuate? ☐ YES ☐ NO

9. Containment:
A. Has the Containment been isolated? ☐ YES ☐ NO
B. Is it capable of being isolated? ☐ YES ☐ NO

10. Other pertinent information _____
_____
_____
_____
_____

Approved: _____
EC or TSS or SSM

STATION STATUS CHECKLIST
(PAGE 2 OF 2)
RADIOLOGICAL INFORMATION

SALEM GENERATING STATION UNIT NUMBER:____ CALCULATION TIME:_____ DATE:_____

1. GASEOUS RELEASE>TECH SPEC (T/S) LIMITS:
(T/S LIMITS: 2.42E+05μCi/sec NG or 2.10E+01μCi/sec IODINE)

YES: [ ] RELEASE START TIME:_____ DATE:_____
NO: [ ]

A. RELEASE TERMINATED: YES [ ] NO [ ] N/A [ ]
B. ANTICIPATED OR KNOWN DURATION OF RELEASE:_____ HOURS
C. TYPE OF RELEASE: GROUND [ ] ELEVATED [ ] N/A [ ]
D. ADJUSTED WIND SPEED:_____(mph) _____(m/sec) WIND DIR (deg from)_____
E. STABILITY CLASS:_____ (A-G) DELTA T:_____(deg C)
F. VENT PATH OF RELEASE: R41 [ ] R45B/C [ ] R44 [ ] R46 [ ]
G. NG RELEASE RATE: R41_____ R45B/C_____ R44_____
R46_____ (μCi/sec)
H. I-131 RELEASE RATE: R41_____ R45B/C_____ R44_____
R46_____ DEFAULT (μCi/sec) (circle if default)
I. TOTAL RELEASE RATE NOBLE GAS:_____(μCi/sec)
J. TOTAL RELEASE RATE IODINE-131:_____(μCi/sec)

2. PROJECTED OFFSITE DOSE RATE CALCULATIONS:

DISTANCE FROM VENT (IN MILES)	XU/Q (1/M2)	TEDE RATE (MREM/HR)	TEDE DOSE (4 DAY) (MREM)	THYROID-CDE RATE (MREM/HR)	THYROID-CDE DOSE (MREM)
MEA 0.79	_____	_____	_____	_____	_____
2.00	_____	_____	_____	_____	_____
LPZ 5.00	_____	_____	_____	_____	_____
EPZ 10.00	_____	_____	_____	_____	_____

3. OTHER PERTINENT INFORMATION: _____

4. UPDATE TO STATES (IF VERBALLY TRANSMITTED):

	NAME	TIME	INITIALS
STATE OF NEW JERSEY:	_____	_____	_____
STATE OF DELAWARE :	_____	_____	_____
AGENCY:	_____	_____	_____

APPROVED: _____
EC or RAC or RSM

CONTROL COPY # 101

ATTACHMENT 9
NON-EMERGENCY NOTIFICATIONS REFERENCE
(SALEM)

I. INSTRUCTIONS

NOTE

This attachment is the source of the names and telephone numbers for making Non-Emergency reports as directed by the ECG Attachment in effect at this time.

NOTE

The SNSS may direct a communicator to make the required notification calls. The responsibility to ensure completion of each step outlined in the ECG attachment and to ensure notification information is accurate remains with the SNSS.

A. REFER to Section II of this Attachment and NOTIFY the required Individuals/Organizations IAW the ECG Attachment in effect.

B. IF required to activate an individual's pager, THEN PERFORM the following:

1. DETERMINE a non-NETS phone number for the pager holder to call back on and MAKE a note of the full call back phone number.

2. DIAL the pager number of the individual you are trying to contact listed in the Communications Log.

3. WHEN you hear "Beep, Beep, Beep," THEN ENTER the call back phone number.

4. HANG UP the phone.

5. CONTINUE making other notifications per Step A.

II. TELEPHONE NUMBER REFERENCE

NOTE

NOTIFY ONLY those individuals by title required by the particular ECG Attachment in effect at this time.

TITLES/NAMES	WORK#	HOME#	PAGER#	CAR#
OPERATIONS MGR				
Chris Bakken	2613	609-769-5420	478-5016	230-8814
James Webster	2985	609-935-7678	478-5236	230-5671
Mike Gwirtz	2622	609-358-7160	223-3830	230-5606
GENERAL MANAGER				
Dave Garchow	2900	610-274-3250	478-5096	230-5894
Chris Bakken	2613	609-769-5420	478-5016	230-8814

GOVERNMENT AGENCY	PRIMARY#	SECONDARY#
LAC DISPATCHER	NETS x5404	609-935-7300 609-935-8127(FAX)
NRC OPERATIONS CENTER	(ENS)301-816-5100	301-951-0550 301-816-5151(FAX)
NRC REGION ONE OFFICE	610-337-5000	

TITLES/NAMES	WORK#	HOME#	PAGER#
NRC RESIDENTS			
Charlie Marschall	1078 or 935-3850	609-444-0181	772-4742
Joe Schoppy	1041 or 935-3850	609-384-1365	772-4742
Todd Fish	1017 or 935-3850	302-654-6612	772-4742
NRC Office	2962 or 935-5151		

II. TELEPHONE NUMBER REFERENCE (cont'd)

TITLES/NAMES	WORK#	HOME#	PAGER#
PUBLIC INFO MGR			
Trish DuBois	1186	609-769-2454	223-3012
Chris Florentz	1002	610-543-0729	478-5367
Nancy Sooy	1007	609-795-6831	223-3393
EMERG PREP REPRESENTATIVE			
Craig Banner	1157	609-728-5043	478-5215
Jim Schaffer	1575	609-935-5606	478-5086
Dave Burgin	1595	609-582-1323	478-5062
EXTERNAL AFFAIRS			
Max LeFevre	1243	609-451-9324	478-5094
Ross Bell	1239	609-455-7435	478-5213
Ed Johnson	1486	609-678-2257	478-5040
RADIOLOGICAL SUPPORT REPRESENTATIVE			
John Russell	2410	609-451-0845	478-5082
Mark Simpson	2443	302-998-4792	478-5378
Bill Weckstein	1558	609-455-3237	478-5186
RAD PRO-CHEM MANAGER			
Eric Katzman	2659	609-468-0709	478-5204
Bill Hunkele	2617	609-455-1583	478-5179
Dave Ruyter	2625	609-299-9487	478-5143
NUCLEAR LICENSING			
DUTY PAGER HOLDER	----	----------	779-4227
Gabe Salamon	5296	610-274-2297	573-1819
Dave Powell	2002	302-239-9912	573-2358
ENVIRONMENTAL LICENSING (contact one)			
Jim Eggers	1339	609-953-9075	573-4655
Dave Hurka	1275	609-299-7433	573-8278
Bob Boot	1169	302-836-8203	573-3700
Don Bowman *	1477	609-547-3795	573-8419
Paul Behrens *	1577	609-691-4766	573-2496
Ed Keating *	1459	609-678-8160	573-4139

* For Spills, Hazmat, NOT Protected Aquatic Species

ATTACHMENT 10

- ONE HOUR REPORT -
NRC REGIONAL OFFICE

NOTES:

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

_____ SNSS 1. Notify **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition _____ (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

_____ SNSS 2. Complete the NRC Data Sheet with initial data available (pages 4 and 5 of this attachment).

_____ notified at _____ hrs on _____
name time date

_____ SNSS 3. Notify **NRC Region I Office** of the event **within 1 hour.** Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are in Attachment 9).

_____ notified at _____ hrs on _____
name time date

_____ SNSS 4. Notify the **NRC Resident Inspector.** (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

INITIALS

____ SNSS 5. Notify **Public Information Manager - Nuclear** or Alternate with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 6. Notify **Telecopy Group E** by transmitting the NRC Data Sheet.

If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

____ SNSS 7. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

II. REPORTING

____ SNSS 1. Ensure that an Incident Report (IR) is prepared.

____ SNSS 2. Forward this attachment, along with the IR and any supporting documentation, to the Operations Manager.

____ OM 3. Review the IR and any other available information for correct classification of event and corrective action taken.

____ OM 4. Contact the LER Coordinator and request written report **(required 30 days after the event).** Provide this attachment and any other supporting documentation received form the SNSS.

____ LERC 5. Prepare required reports. ECG Attachment 23 may be used as a guide for reporting requirements.

Report or LER Number _____

____ LERC 6. Forward this attachment to the Emergency Preparedness Manager.

____ EPM 7. Ensure offsite (state and local) reporting requirements are met.

____ EPM 8. Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.

NRC DATA SHEET
(Page 1 of 2)

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	TELEPHONE NUMBER (FOR CALL BACK)

EVENT TIME & ZONE	EVENT DATE
POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATION (Check One)

	GENERAL EMERGENCY	*		1HR	10CFR50.72(b)(1) ( )
	SITE AREA EMERGENCY	*		4HR	10CFR50.72(b)(2) ( )
	ALERT			1HR	SECURITY/SAFEGUARDS
	UNUSUAL EVENT				TRANSPORTATION EVENT
					OTHER:

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITION STATEMENT.

EVENT DESCRIPTION

Include Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE				
NRC RESIDENT				ANYTHING UNUSUAL OR NOT UNDERSTOOD?		YES (Explain above)	NO
STATE(s) (NJ) (DEL)				DID ALL SYSTEMS FUNCTION AS REQUIRED?		YES	NO (Explain above)
LOCAL (LACT)							
OTHER GOV. AGENCIES				MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:		ADDITIONAL INFO ON PAGE 2?
MEDIA/PRESS RELEASE							

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

APPROVED FOR TRANSMITTAL: _____
SNSS

Rev. 1

SGS

NRC DATA SHEET
(Page 2 of 2)

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

	LIQUID RELEASE		GASEOUS RELEASE		UNPLANNED RELEASE		PLANNED RELEASE		ONGOING		TERMINATED
	MONITORED		UNMONITORED		OFFSITE RELEASE		T.S. EXCEEDED		RM ALARMS		AREAS EVACUATED
	PERSONNEL EXPOSED OR CONTAMINATED				OFFSITE PROTECTIVE ACTIONS RECOMMENDED		State release path in description.				

RELEASE TYPE	Release Rate (Ci/sec)	T.S. LIMIT	% T.S. LIMIT	Total Activity (Ci)	T.S. LIMIT	% T.S. LIMIT
Noble Gas						
Iodine						
Particulate						
Liquid (excluding tritium & dissolved noble gases)						
Liquid (Tritium)						
TOTAL ACTIVITY						

RELEASE PATHWAY	PLANT VENT	CONDENSER/AIR EJECTOR	MAIN STEAM LINE	SG BLOWDOWN	OTHER
RAD MONITOR READINGS & UNITS					
ALARM SETPOINTS					
% T.S. LIMIT (if applicable)					

RCS OR SG TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

LOCATION OF THE LEAK (e.g. SG, valve, pipe, etc.)

LEAK RATE:	UNITS: gpm/gpd	T.S. LIMITS:	SUDDEN OR LONG TERM DEVELOPMENT?			
				SUDDEN		LONG TERM
LEAK START DATE:	TIME:	COOLANT ACTIVITY & UNITS: PRIMARY –			SECONDARY –	

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL:

EVENT DESCRIPTION
(Continued from Page 1)

APPROVED FOR TRANSMITTAL: _____
SNSS

ATTACHMENT 11

-ONE HOUR REPORT-
SECURITY/SAFEGUARDS

NOTE

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of contact names and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

_____ SNSS 1. Notify **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition _____. (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 2. Complete the NRC Data Sheet with initial data available (pages 4 and 5 of this attachment).

_____ SNSS 3. If the safeguards event is of common concern to Hope Creek as well as Salem, in your judgment, notify the **Hope Creek SNSS** (NETS-X5224; 9-339-3027; 9-339-3059) and provide a briefing on the event.

_____ SNSS 4. Notify **NRC Operations Center** of the event **within 1 hour.** Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

_____ SNSS 5. Notify the **NRC Resident Inspector.** (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

Initials

_____ SNSS 6. Notify the **Public Information Manager - Nuclear** or alternate with details of event: (Contacts are listed in Attachment 9).

_____notified at_____hrs on_____
name time date

_____ SNSS 7. Notify **Telecopy Group E** by transmitting the NRC Data Sheet.

If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

_____ SNSS 8. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

_____ SNSS 9. Provided the **NRC Operations Center** with updates on the Event as received from Security.

_____notified at_____hrs on_____
name time date

II. REPORTING

SNSS	1.	Obtain an Incident Report (IR) Form from the Security Shift Supervisor and ensure it is prepared in accordance with NA-AP.ZZ-0006(Q).
SNSS	2.	Forward this attachment, along with the IR and any supporting documentation to the Operations Manager.
OM	3.	Review the IR and other available information for correct classification and corrective action taken.
OM	4.	Contact the **Nuclear Security Support Supervisor** (NSSS) at the Security Center and request written followup **(30 day safeguards event report)** be completed in accordance with Security Contingency Procedure SCP-14. Provide this attachment and any other supporting documentation to the NSSS.
NSSS	5.	Prepare (30 day) Safeguards Event Report in accordance with Security Contingency Procedure, SCP-14.
NSSS	6.	When no longer required, send this EC Attachment and any non-safeguards information to the Emergency Preparedness Manager.
EPM	7.	Ensure that offsite (state and local) reporting requirements have been met.
EPM	8.	Forward this attachment package to the Central Technical Document Room (CTDR) from microfilming.

NRC DATA SHEET
(Page 1 of 2)

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	TELEPHONE NUMBER (FOR CALL BACK)

EVENT TIME & ZONE	EVENT DATE
POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATION (Check One)

	GENERAL EMERGENCY	*		1HR	10CFR50.72(b)(1) ( )
	SITE AREA EMERGENCY	*		4HR	10CFR50.72(b)(2) ( )
	ALERT			1HR	SECURITY/SAFEGUARDS
	UNUSUAL EVENT				TRANSPORTATION EVENT
					OTHER:

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITION STATEMENT.

EVENT DESCRIPTION

Include Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE			
NRC RESIDENT				ANYTHING UNUSUAL OR NOT UNDERSTOOD?	YES (Explain above)	NO
STATE(s) (NJ) (DEL)				DID ALL SYSTEMS FUNCTION AS REQUIRED?	YES	NO (Explain above)
LOCAL (LACT)						
OTHER GOV. AGENCIES				MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:	ADDITIONAL INFO ON PAGE 2?
MEDIA/PRESS RELEASE						

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

APPROVED FOR TRANSMITTAL: _____
SNSS

SGS

NRC DATA SHEET
(Page 2 of 2)

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

	LIQUID RELEASE		GASEOUS RELEASE		UNPLANNED RELEASE		PLANNED RELEASE		ONGOING		TERMINATED
	MONITORED		UNMONITORED		OFFSITE RELEASE		T.S. EXCEEDED		RM ALARMS		AREAS EVACUATED
	PERSONNEL EXPOSED OR CONTAMINATED				OFFSITE PROTECTIVE ACTIONS RECOMMENDED				State release path in description.		

RELEASE TYPE	Release Rate (Ci/sec)	T.S. LIMIT	% T.S. LIMIT	Total Activity (Ci)	T.S. LIMIT	% T.S. LIMIT
Noble Gas						
Iodine						
Particulate						
Liquid (excluding tritium & dissolved noble gases)						
Liquid (Tritium)						
TOTAL ACTIVITY						

RELEASE PATHWAY	PLANT VENT	CONDENSER/AIR EJECTOR	MAIN STEAM LINE	SG BLOWDOWN	OTHER
RAD MONITOR READINGS & UNITS					
ALARM SETPOINTS					
% T.S. LIMIT (if applicable)					

RCS OR SG TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

LOCATION OF THE LEAK (e.g. SG, valve, pipe, etc.)

LEAK RATE:	UNITS: gpm/gpd	T.S. LIMITS:	SUDDEN OR LONG TERM DEVELOPMENT?		
				SUDDEN	LONG TERM
LEAK START DATE:	TIME:	COOLANT ACTIVITY & UNITS: PRIMARY –		SECONDARY –	

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL:

EVENT DESCRIPTION
(Continued from Page 1)

APPROVED FOR TRANSMITTAL: _____
SNSS

Rev. 2

CONTROL COPY # 101

ATTACHMENT 12

- ONE HOUR REPORT -

NOTE

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step should be initialed by the responsible individual when completed.

I. **NOTIFICATIONS**

_____ SNSS 1. Notify the **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition _____. (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 2. Complete the NRC Data Sheet with initial data available (pages 4 and 5 of this attachment).

_____ SNSS 3. Notify **NRC Operations Center** of the event **within 1 hour .** Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 4. Notify the **NRC Resident Inspector.** (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

Initials

____ SNSS 5. Notify **Public Information Manager - Nuclear** or Alternate with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 6. Notify **Emergency Preparedness & Public Information** by transmitting (faxing) the NRC Data Sheet

If transmission is incomplete, notify the **Emergency Preparedness Representative** (EP Rep.) with the description of the event. (Contacts are listed in Attachment 9)

EP Representative:

_____ notified at _____ hrs on _____
name time date

____ SNSS 7. If a major loss of communications capability has occurred (such as ENS, NETS, DID, etc.), then notify both of the following;

EP Representative: (Attachment 9)

_____ notified at _____ hrs on _____
name time date

Newark Help Desk Operator: (201-430-5555 or ESSX 5555) Inform the Operator that the failed system is an "Emergency Priority Circuit".

____ SNSS 8. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

Initials

II. REPORTING

_____ SNSS 1. Ensure that an Action Request (AR) is prepared.

_____ SNSS 2. Forward this attachment, along with the AR and any Supporting documentation, to the Operations Manager.

_____ OM 3. Review AR and any other available information For correct classification of event and corrective action taken.

_____ OM 4. Contact the LER Coordinator and request written followup **(required 30 days after event).** Provide this attachment and any other supporting documentation received from the SNSS.

_____ LERC 5. Prepare required reports.

Report or LER Number _____

_____ LERC 6. Forward this attachment to the Emergency Preparedness Manager.

_____ EPM 7. Ensure that offsite (state and local) reporting requirements have been met.

_____ EPM 8. Forward this Attachment package to the Central Technical Document Room (CTDR) for microfilming.

NRC DATA SHEET (Page 1 of 2)

NOTIFICATION TIME	FACILITY: SALEM GENERATING STATION	CALLER'S NAME	
EVENT DATE	EVENT TIME EASTERN TIME ZONE	POWER / MODE BEFORE EVENT	POWER / MODE AFTER EVENT

EVENT CLASSIFICATION (Check One)

☐	GENERAL EMERGENCY	☐	ALERT	☐	1HR 10CFR50.72(b)(1) *( )	☐	1HR SECURITY / SAFEGUARDS
☐	SITE AREA EMERGENCY	☐	UNUSUAL EVENT	☐	4HR 10CFR50.72(b)(2) *( )	☐	TRANSPORTATION EVENT
☐	OTHER (DESCRIBE):						

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITON STATEMENT.

EVENT DESCRIPTION

Include systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc. Note anything unusual or not understood. Indicate systems and safety-related equipment that are not operational.

(Use back if more room is needed)

RCS/TUBE LEAK DATA (Complete only if event includes an RCS or SG tube leak)

LOCATION OF LEAK (e.g. SG, VALVE, PIPE, etc.) : _____

TIME & DATE LEAK STARTED: _____ (TIME) ON _____ (DATE)

LEAK RATE: _____ gpm or gpd. T/S LEAK LIMITS: _____

LAST KNOWN COOLANT ACTIVITY: PRIMARY (DEI - μCi/cc) _____ SECONDARY (GBG - μCi/cc) _____

WAS THIS LEAK A SUDDEN OR LONG-TERM DEVELOPMENT? _____

NOTIFICATIONS

ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE
NRC RESIDENT				STATE OF NEW JERSEY				STATE OF DELAWARE			
LOCAL (LAC TOWNSHIP)				OTHER GOVERNMENT AGENCIES				MEDIA / PRESS RELEASE			
MODE OF OPERATION UNTIL CORRECTED: ___				ESTIMATED RESTART DATE: _____				ADDITIONAL INFO ON PAGE 2?			✓

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

SNSS APPROVAL TO TRANSMIT

NRC DATA SHEET (Page 2 of 2)

MESSAGE DATE/TIME: _____

RADIOLOGICAL RELEASE DATA: (This section is only required to be completed if a release exceeding Tech Specs is in progress or has already occurred).

Check ✓ correct statements and provide to the NRC.

____ There is a gaseous release above Tech Spec limits in progress (Tech Spec Limit: Noble Gas = 2.37E+05 μCi/sec).
____ There is an Iodine release above Tech Spec limits in progress (Tech Spec Limit: Iodine = 2.10E+01 μCi/sec).
____ There is a liquid release above Tech Spec limits in progress.
____ The release is ongoing (still above Tech Specs) at this time.
____ The release was terminated (no longer above Tech Specs) at _____hrs.
____ The release is/was planned and can be isolated.
____ The release pathway is monitored by the Radiation Monitoring System.
____ Areas evacuated onsite due to release concerns are: _____
____ Station personnel have received exposure above 10CFR20 limits.
____ Station personnel have been contaminated to an extent requiring offsite assistance to decon.

SPECIFIC RADIOLOGICAL PARAMETERS: (Provide current values)

The Noble Gas release rate (from SSCL) is: _____ μCi/sec.
The Iodine release rate (from SSCL) is: _____ μCi/sec.

RELEASE PATHWAY MONITORS: (Provide monitor reading with units and alarm setpoint only for those below listed monitors in Alarm).

Monitor # and Name	Current Reading	Alarm Setpoint
R41B Plant Vent Iodine	_____ cpm	8.33E+04 cpm
R41C Normal Plant Vent Gas	_____ cpm	1.14E+04 cpm
R45B Mid Plant Vent Gas	_____ μCi/cc	3.00E−02 μCi/cc
R45C High Plant Vent Gas	_____ μCi/cc	1.00E+02 μCi/cc
R46 Highest Steam Line (R46A thru D)	_____ mR/hr	1.00E+01 mR/hr
R15 Condenser Air Ejector	_____ cpm	_____ cpm
R19 Highest S/G Blowdown	_____ cpm	_____ cpm

NRC EVENT UPDATE: (Document additional information provided to NRC due to their request or as a result of plant/event status changes).

(Use back if more room is needed)

SNSS APPROVAL TO TRANSMIT

ATTACHMENT 13

FOUR HOUR REPORT
CONTAMINATION EVENTS OUTSIDE OF THE RADIOLOGICALLY CONTROLLED AREA

NOTE:

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step should be initialed by the responsible individual when completed.

I. NOTIFICATIONS

INITIALS

_____ SNSS 1. Record the location of the Contaminated Area(s)

_____

_____

_____

_____ SNSS 2. Direct the **Shift Radiation Protection Technician** to implement the Onsite Contamination Event Checklist (Pages 5-7 of this Attachment).

_____ SNSS 3. Contact **Radiological Support** Representative (Contacts are listed in Attachment 9) and direct him/her to report to the station to assume coordination of the radiological aspects of the event. Direct the **Radiological Support Representative** to obtain the Onsite

Contamination Event Checklist from the station RP group and complete all remaining actions.

_____ notified at _____ hrs on _____
name time date

____ SNSS 4. Contact the **Hope Creek Senior Nuclear Shift Supervisor** and provide a brief description of the event and as needed obtain support for assessment and control of the event.

_____ SNSS 5. If routinely accessed areas are contaminated, use the **plant page system** to warn plant personnel to avoid these areas.

_____ SNSS 6. Notify Licensing with event details and direct Licensing Representative to make any required notifications in accordance with the DPCC/DCR Plan.(contacts are listed in Attachment 9)

____ SNSS 7. Notify **Operations Manager** and confirm classification of the event. ECG Section _____ Initiating Condition _____. (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

____ SNSS 8. Complete the **NRC Data Sheet** with initial data available (pages 8 and 9 of this attachment).

_____ SNSS 9. Notify **LAC Dispatcher** of event (phone numbers are in Attachment 9).

____ SNSS 10. Notify **Public Information Manager - Nuclear** or alternate with details of the event. (Contacts are listed in Attachment 9)

_____ SNSS 11. Notify the **NRC Resident Inspector**. (Contacts are listed in attachment 9).

_____ SNSS 12. Notify **NRC Operations Center** of the event **within 4 hours.** Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 13. Notify **Emergency Preparedness & Public Information** by transmitting (faxing) the NRC Data Sheet. If transmission is incomplete, notify the Emergency Preparedness Representative with the description of the event. (Contacts are listed in Attachment 9).

_____ SNSS 14. Notify **External Affairs** with details of the event. Contacts are listed in attachment 9).

II. REPORTING

____ SNSS 1. Initiate Action Request (AR) documentation for the event in accordance with NC.NA-AP.ZZ-0006(Q), Corrective Action Program.

____ SNSS 2. Forward this attachment, along with the AR documentation, to the Operations Manager.

____ CM 3. Review the documentation and any other available information for correct classification of the event and corrective action taken.

____ OM 4. Contact the LER Coordinator and request written followup **(required 30 days after the event)**. Provide this attachment and any other supporting documentation received from the SNSS.

_____ LERC	5.	Prepare required reports.
		Report or LER number _____
_____ LERC	6.	Forward this attachment to the Manager -Emergency Preparedness & Radiological Support.
_____ MEPRS	7.	Ensure that offsite (state and local) reporting requirements have been met.
_____ MEPRS	8.	Forward this attachment to the Central Technical Document Room (CTDR) for microfilming.

Onsite Contamination Event Checklist

(Page 1 of 3)

This checklist provides general guidance in the event of an onsite contamination incident. It is to be implemented by onsite Radiation Protection personnel pending arrival of Radiological Support personnel. Upon arrival, the Radiological Support representative should be provided with a complete briefing of the event by the SRPT and continue with the implementation of this checklist.

Checklist Notes:

- Steps need not be performed in the order provided.
- All steps should be initialed as they are completed - steps that are not performed because they are not applicable may be skipped and should be marked "N/A"
- Completion of this checklist may be suspended or discontinued in the event of a declared emergency..

INITIAL ACTIONS	
Action	Initial/Date
Perform surveys to establish contaminated areas	
Rope off and post contaminated areas. ○ Restrict access to contaminated areas until posting is complete. ○ If access to contaminated areas cannot be adequately controlled with available RP resources, contact Security for assistance.	
Notify Security to prohibit vehicles from entering the site. Security should not permit vehicles to exit the site until they are surveyed by Radiation Protection.	
If areas that can be routinely accessed areas are contaminated, provide personnel contamination monitoring at the Security Center.	
Notify the station Radiation Protection Manager	
Provide a briefing to the RP department at the unaffected station. Request assistance to complete survey and personnel monitoring activities if available resources are insufficient.	

Onsite Contamination Event Checklist

(Page 2 of 3)

AUGMENTED ACTIONS	
Action	Initial/Date
Establish an Incident Response Control Center in an accessible location. Suggested locations: TSC, EP Class Room, RP Office Area, Location:	
Start and maintain an event log	
If it appears that recovery actions will take greater than twenty-four hours, develop an interim organization to handle the various aspects of the event including O Site Characterization and Decontamination O Dose Assessment O Communications O Site access / egress O Document control	
SITE CHARACTERIZATION AND DECONTAMINATION	
Develop a map of the contaminated areas. Care should be taken to ensure that consistent survey techniques and reporting units are used.	
Collect and perform isotopic analysis on several samples from the contaminated areas before decontamination activities begin.	
Reduce contamination below the limit of detection whenever possible. If this is not achievable, fixing of contamination may be needed to prevent further spread.	
DOSE ASSESSMENT	
Compile a list of individuals who may have been in the contaminated area. O Consider calling workers back to site if the potential for personnel contamination was high.	
Determine the need to survey clothing, vehicles, and homes of potentially contaminated workers. O Surveys of this nature should be documented and retained.	
Perform internal dose calculations and calculate external dose from groundshine. Both realistic and bounding case calculations should be performed O Perform confirmatory whole body counts as required O Collect and process TLDs as required	

Onsite Contamination Event Checklist
(Page 3 of 3)

AUGMENTED ACTIONS	
Action	Initial/Date
DOSE ASSESSMENT (CONTINUED)	
In the case of a release from a plant system, calculate the source term (total amount of activity released).	
COMMUNICATIONS	
Ensure that ALL site personnel are adequately informed as to the location of contaminated areas and the requirements for additional monitoring (if any) via posting in the Security Center. Update postings as needed.	
Develop a communications plan to provide frequent updates to plant personnel	
DOCUMENTATION	
Secure copies of all surveys, sample results and other related documentation and place them in Radiological Support files.	
Forward records of residual contamination, including contamination that was fixed in place, to Licensing for inclusion in the 10 CFR50.75(g) file.	
Return this checklist to the Senior Nuclear Shift Supervisor after all items on the checklist have been addressed.	

NRC DATA SHEET (Page 1 of 2)

NOTIFICATION TIME	FACILITY: SALEM GENERATING STATION	CALLER'S NAME	
EVENT DATE	EVENT TIME EASTERN TIME ZONE	POWER / MODE BEFORE EVENT	POWER / MODE AFTER EVENT

EVENT CLASSIFICATION (Check One)

☐ GENERAL EMERGENCY	☐ ALERT	☐ 1HR 10CFR50.72(b)(1) *( )	☐ 1HR SECURITY / SAFEGUARDS
☐ SITE AREA EMERGENCY	☐ UNUSUAL EVENT	☐ 4HR 10CFR50.72(b)(2) *( )	☐ TRANSPORTATION EVENT
☐ OTHER (DESCRIBE):			

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITON STATEMENT.

EVENT DESCRIPTION

Include systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc. Note anything unusual or not understood. Indicate systems and safety-related equipment that are not operational.

(Use back if more room is needed)

RCS/TUBE LEAK DATA (Complete only if event includes an RCS or SG tube leak)

LOCATION OF LEAK (e.g. SG, VALVE, PIPE, etc.) : _____

TIME & DATE LEAK STARTED: _____ (TIME) ON _____ (DATE)

LEAK RATE: _____ gpm or gpd. T/S LEAK LIMITS: _____

LAST KNOWN COOLANT ACTIVITY: PRIMARY (DEI - μCi/cc) _____ SECONDARY (GBG - μCi/cc) _____

WAS THIS LEAK A SUDDEN OR LONG-TERM DEVELOPMENT? _____

NOTIFICATIONS

ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE
NRC RESIDENT				STATE OF NEW JERSEY				STATE OF DELAWARE			
LOCAL (LAC TOWNSHIP)				OTHER GOVERNMENT AGENCIES				MEDIA / PRESS RELEASE			
MODE OF OPERATION UNTIL CORRECTED: ____				ESTIMATED RESTART DATE: _____				ADDITIONAL INFO ON PAGE 2?			

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

SNSS APPROVAL TO TRANSMIT

NRC DATA SHEET (Page 2 of 2)

MESSAGE DATE/TIME: _____

RADIOLOGICAL RELEASE DATA: (This section is only required to be completed if a release exceeding Tech Specs is in progress or has already occurred).

Check ✓ correct statements and provide to the NRC.

____ There is a gaseous release above Tech Spec limits in progress (Tech Spec Limit: Noble Gas = 2.37E+05 μCi/sec).
____ There is an Iodine release above Tech Spec limits in progress (Tech Spec Limit: Iodine = 2.10E+01 μCi/sec).
____ There is a liquid release above Tech Spec limits in progress.
____ The release is ongoing (still above Tech Specs) at this time.
____ The release was terminated (no longer above Tech Specs) at _____hrs.
____ The release is/was planned and can be isolated.
____ The release pathway is monitored by the Radiation Monitoring System.
____ Areas evacuated onsite due to release concerns are: _____
____ Station personnel have received exposure above 10CFR20 limits.
____ Station personnel have been contaminated to an extent requiring offsite assistance to decon.

SPECIFIC RADIOLOGICAL PARAMETERS: (Provide current values)

The Noble Gas release rate (from SSCL) is: _____ μCi/sec.
The Iodine release rate (from SSCL) is: _____ μCi/sec.

RELEASE PATHWAY MONITORS: (Provide monitor reading with units and alarm setpoint only for those below listed monitors in Alarm).

Monitor # and Name	Current Reading	Alarm Setpoint
R41B Plant Vent Iodine	_____ cpm	8.33E+04 cpm
R41C Normal Plant Vent Gas	_____ cpm	1.14E+04 cpm
R45B Mid Plant Vent Gas	_____ μCi/cc	3.00E−02 μCi/cc
R45C High Plant Vent Gas	_____ μCi/cc	1.00E+02 μCi/cc
R46 Highest Steam Line (R46A thru D)	_____ mR/hr	1.00E+01 mR/hr
R15 Condenser Air Ejector	_____ cpm	_____ cpm
R19 Highest S/G Blowdown	_____ cpm	_____ cpm

NRC EVENT UPDATE: (Document additional information provided to NRC due to their request or as a result of plant/event status changes).

(Use back if more room is needed)

SNSS APPROVAL TO TRANSMIT

CONTROL COPY # 101

ATTACHMENT 14

- FOUR HOUR REPORT -

NOTE

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step should be initialed by the responsible individual when completed.

I. NOTIFICATIONS

____ SNSS 1. Notify the **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition _____ (Contacts are listed in Attachment 9).

____ SNSS 2. Complete the NRC Data Sheet with initial data available (pages 4 and 5 of this attachment).

____ SNSS 3. If this attachment is being utilized as a result of a reactor trip notify the **General Manager - Salem Operations** of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 4. Notify **LAC Dispatcher** of event. (Phone numbers are in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 5. Notify **Public Information Manager - Nuclear** or alternate with details of event: (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

Initials

____ SNSS 6. Notify **NRC Operations Center** of the event within 4 hours. Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 7. Notify the **NRC Resident Inspector.** (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 8. Notify **Emergency Preparedness & Public Information** by transmitting (faxing) the NRC Data Sheet.

If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 9. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

Initials

II. REPORTING

Initials		
____ SNSS	1.	Ensure that an Action Request (AR) is prepared.
____ SNSS	2.	Forward this attachment, along with the AR and any supporting documentation, to the Operations Manager.
____ OM	3.	Review AR and any other available information for correct classification of event and corrective action taken.
____ OM	4.	Contact the LER Coordinator and request written followup **(required 30 days after event).** Provide this attachment and any other supporting documentation received from the SNSS.
____ LERC	5.	Prepare required reports.
		Report or LER Number _____
____ LERC	6.	Forward this attachment to the Emergency Preparedness Manager.
____ EPM	7.	Ensure that offsite (state and local) reporting requirements have been met.
____ EPM	8.	Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.

NRC DATA SHEET (Page 1 of 2)

NOTIFICATION TIME	FACILITY: SALEM GENERATING STATION	CALLER'S NAME	
EVENT DATE	EVENT TIME EASTERN TIME ZONE	POWER / MODE BEFORE EVENT	POWER / MODE AFTER EVENT

EVENT CLASSIFICATION (Check One)

☐	GENERAL EMERGENCY	☐	ALERT	☐	1HR 10CFR50.72(b)(1) *( )	☐	1HR SECURITY / SAFEGUARDS
☐	SITE AREA EMERGENCY	☐	UNUSUAL EVENT	☐	4HR 10CFR50.72(b)(2) *( )	☐	TRANSPORTATION EVENT
☐	OTHER (DESCRIBE):						

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITON STATEMENT.

EVENT DESCRIPTION

Include systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc. Note anything unusual or not understood. Indicate systems and safety-related equipment that are not operational.

(Use back if more room is needed)

RCS/TUBE LEAK DATA (Complete only if event includes an RCS or SG tube leak)

LOCATION OF LEAK (e.g. SG, VALVE, PIPE, etc.) : _____

TIME & DATE LEAK STARTED: _____ (TIME) ON _____ (DATE)

LEAK RATE: _____ gpm or gpd. T/S LEAK LIMITS: _____

LAST KNOWN COOLANT ACTIVITY: PRIMARY (DEI - μCi/cc) _____ SECONDARY (GBG - μCi/cc) _____

WAS THIS LEAK A SUDDEN OR LONG-TERM DEVELOPMENT? _____

NOTIFICATIONS

ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE
NRC RESIDENT				STATE OF NEW JERSEY				STATE OF DELAWARE			
LOCAL (LAC TOWNSHIP)				OTHER GOVERNMENT AGENCIES				MEDIA / PRESS RELEASE			
MODE OF OPERATION UNTIL CORRECTED: ____				ESTIMATED RESTART DATE: _____				ADDITIONAL INFO ON PAGE 2?			

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

SNSS APPROVAL TO TRANSMIT

NRC DATA SHEET (Page 2 of 2)

MESSAGE DATE/TIME: _____

RADIOLOGICAL RELEASE DATA: (This section is only required to be completed if a release exceeding Tech Specs is in progress or has already occurred).

Check ✓ correct statements and provide to the NRC.

____ There is a gaseous release above Tech Spec limits in progress (Tech Spec Limit: Noble Gas = 2.37E+05 μCi/sec).
____ There is an Iodine release above Tech Spec limits in progress (Tech Spec Limit: Iodine = 2.10E+01 μCi/sec).
____ There is a liquid release above Tech Spec limits in progress.
____ The release is ongoing (still above Tech Specs) at this time.
____ The release was terminated (no longer above Tech Specs) at _____ hrs.
____ The release is/was planned and can be isolated.
____ The release pathway is monitored by the Radiation Monitoring System.
____ Areas evacuated onsite due to release concerns are: _____
____ Station personnel have received exposure above 10CFR20 limits.
____ Station personnel have been contaminated to an extent requiring offsite assistance to decon.

SPECIFIC RADIOLOGICAL PARAMETERS: (Provide current values)

The Noble Gas release rate (from SSCL) is: _____ μCi/sec.
The Iodine release rate (from SSCL) is: _____ μCi/sec.

RELEASE PATHWAY MONITORS: (Provide monitor reading with units and alarm setpoint only for those below listed monitors in Alarm).

Monitor # and Name	Current Reading	Alarm Setpoint
R41B Plant Vent Iodine	_____ cpm	8.33E+04 cpm
R41C Normal Plant Vent Gas	_____ cpm	1.14E+04 cpm
R45B Mid Plant Vent Gas	_____ μCi/cc	3.00E-02 μCi/cc
R45C High Plant Vent Gas	_____ μCi/cc	1.00E+02 μCi/cc
R46 Highest Steam Line (R46A thru D)	_____ mR/hr	1.00E+01 mR/hr
R15 Condenser Air Ejector	_____ cpm	_____ cpm
R19 Highest S/G Blowdown	_____ cpm	_____ cpm

NRC EVENT UPDATE: (Document additional information provided to NRC due to their request or as a result of plant/event status changes).

(Use back if more room is needed)

SNSS APPROVAL TO TRANSMIT

ATTACHMENT 15

- ENVIRONMENTAL PROTECTION PLAN -

NOTES:

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

_____ 1. Provide event description: _____
SNSS

_____

_____

NOTE

Environmental Licensing personnel will determine the reportability requirements for Unusual or Important Environmental Events.

_____ 2. Notify a member of the **Environmental Licensing Group** as soon as practical and provide a description of the event for a determination of reportability. (Contacts are listed in Attachment 9).
SNSS

_____ notified at _____ hrs on _____
name time date

☐ Not Reportable ☐ 24 Hour Report ☐ 4 Hour Report

NOTE

Required reports shall be made within the appropriate time limits from the determination time established in Step 2 above.

INITIALS

_____ SNSS 2.1 If **Environmental Licensing** determines that this incident is not reportable, then continue by going to Section II, Pg. 3.

_____ SNSS 2.2 If **Environmental Licensing** determines that this incident requires only a 24 hour report to the NRC Resident, then continue by going directly to Step 3.

_____ SNSS 2.3 If **Environmental Licensing** determines that this incident require a four hour report per **10CFR50.72(b)(2)(vi)**, then exit this attachment and refer to **EAL in Section 17, Initiating Condition "E".**

_____ SNSS 3. Notify **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition_____. (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 4. Notify the **NRC Resident Inspector** of the event **within 24 hours.** (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

NOTE
NRC Operations Center shall be notified only if the NRC Resident cannot be contacted within 24 hours.

II. REPORTING

Initials

_____ 1. Ensure that an Incident Report (IR) is prepared.
SNSS

_____ 2. Forward this attachment, along with the IR and any supporting documentation, to the Operations Manager.
SNSS

_____ 3. Review the IR and any other available information for correct classification of event and corrective action taken.
OM

_____ 4. Contact the LER Coordinator and request that the required written reports be prepared. Provide this attachment and any other supporting documentation received from the SNSS.
OM

_____ 5. Prepare required reports. ECG Attachment 23 may be used as a guide for reporting requirements.
LERC

Report or LER Number _____

_____ 6. Forward this attachment to the Emergency Preparedness Manager.
LERC

_____ 7. Ensure that offsite (state and local) reporting requirements have been met.
EPM

_____ 8. Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.
EPM

CONTROL COPY # 101

ATTACHMENT 16

SPILL/DISCHARGE REPORTING

NOTE

A. A 15 minute notification to NJDEPE may be required as identified in step 4.
B. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.
C. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

Initials

____ SNSS 1. Immediately dispatch Site Protection to the location of the spill/discharge to coordinate clean-up and/or containment of the spilled material.

____ SNSS 2. If the spill/discharge was to a secondary containment or an impervious surface and the material can be completely cleaned up;

OR

If the spill/discharge was sewage or sanitary waste which did not enter a storm drain or water body;

THEN

Proceed to Section II of this attachment. This spill is not reportable to NJDEPE.

____ SNSS 3. Complete **Spill/Discharge Notification Form**, Pg. 9 of this attachment. (Do not implement notification until directed to by step 4 OR 5 of this attachment).

Initials

____ SNSS

4. If this ECG Attachment is being implemented due to:

   A. Spill/Discharge into a storm drain or the Delaware, EAL 8F.

   OR

   B. Spill/Discharge which has passed through the engineered fill and into the ground water, EAL 8E1.

   Immediately (within 15 min.), notify the NJDEPE with the NOTIFICATION FORM information completed in the previous step. NJDEPE phone numbers are on the top of the notification form.

   THEN

   C. Proceed to step 6 of this attachment and continue.

____ SNSS

5. If this ECG attachment is being implemented due to a spill or discharge (EAL 8E2) which does not meet the criteria in step 4 above and cleanup is in progress, perform the following:

   A. Continue to coordinate cleanup activities and ensure personnel performing the cleanup activities keep the on-duty SNSS informed of their progress.

   B. Notify Licensing with event details and request licensing representative to provide guidance concerning reportability to the Nuclear Regulatory Commission. (See contact list in ECG Attachment 9).

      1. If licensing determines that the event is reportable to the Nuclear Regulatory Commission then implement step 7 thru 16 of this attachment then continue with the next step, (step 5C).

   C. If the spill/discharge is cleaned up within 24 hours, NJDEPE notification is not required. Proceed to Section II of this attachment.

Initials

D. If after 24 hours the spill/discharge is not yet cleaned up, then again contact the licensing representative and request additional guidance regarding NJDEPE reportability and proceed as follows:

1. If licensing determines that the spill/discharge is reportable to the NJDEPE, then immediately (within 15 min) notify the NJDEPE, with the NOTIFICATION FORM information completed in Step 3.

   NJDEPE phone numbers are on the top of the notification form. When NJDEPE call is complete, proceed to step 6 of this attachment and continue.

2. If at the completion of cleanup Licensing determines that the spill/discharge is not reportable then proceed to Section II of this attachment.

____ SNSS 6. Notify/Update **Licensing** with event details and complete substeps A, B, C below:

A. Inform **Licensing** about status of 15 min. NJDEPE call:

☐ Call was made within 15 min. of discovery/confirmation.

☐ Call was NOT made within 15 min., but was made within ____ min. of discovery/confirmation.

B. Direct **Licensing** to make any required notifications in accordance with the DPCC/DCR plan.

_____ notified at _____ hrs on _____
name time date

Initials

C. Request direction from Licensing concerning Nuclear Regulatory Commission reportability of the Event. Proceed as directed below:

☐ If **REPORTABLE** to the Nuclear Regulatory Commission (NRC), and not done previously, continue implementation of this attachment at step 7.

☐ If **NOT REPORTABLE**, or the NRC was previously contacted, proceed to Section II of this attachment.

____ SNSS 7. Notify **Operations Manager** of the event. (Contacts are listed in Attachment 9.)

ECG Section __8__ Initiated Condition __E or F__ (circle one)

_____ notified at _____ hrs on _____
name time date

____ SNSS 8. Notify **Hope Creek SNSS** and provide description of the event.

____ SNSS 9. Notify **LAC Dispatcher** within 4 hrs. of event. (Phone numbers are in Attachment 9.)

_____ notified at _____ hrs on _____
name time date

____ SNSS 10. Complete the NRC Data Sheet with initial data available (pages 7 and 8 of this attachment).

____ SNSS 11. Notify the **NRC Operations Center** of the event **within 4 hours.** Use the NRC Data Sheet to record any additional information provided to the NRC. (Phone numbers are listed in Attachment 9.)

_____ notified at _____ hrs on _____
name time date

Initials

____ SNSS 12. Notify the **NRC Resident Inspector.** (Contacts are listed in Attachment 9.)

_____notified at_____hrs on_____
name time date

____ SNSS 13. Notify **Public Information Manager - Nuclear** or Alternate with details of the event. (Contacts are listed in Attachment 9.)

_____notified at_____hrs on_____
name time date

____ SNSS 14. Notify **Telecopy Group E** by transmitting the NRC Data Sheet.

If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

____ SNSS 15. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

____ SNSS 16. If completion of steps 7 thru 16 were initiated by step 5.B.1, then return to step 5.C and continue as directed, otherwise proceed to Section II of this attachment.

II. REPORTING

____ SNSS	1.	Ensure that an Incident Report (IR) is prepared.
____ SNSS	2.	Forward this attachment, along with the IR and any supporting documentation to the Operations Manager.
____ OM	3.	Review IR and any other available information for correct classification of event and corrective action taken.
____ OM	4.	Contact the LER Coordinator (LERC) and request that the required written reports be prepared. Provide this attachment and any other supporting documentation received from the SNSS.
____ LERC	5.	Provide Licensing, (Environmental Group), with a copy of this attachment including the spill/discharge notification report received from the SNSS.
____ LERC	6.	Prepare LER if required. If an LER is prepared, contact Licensing and ensure that the information on the LER and on the NJDEPE Confirmation Report are consistent. Report or LER Number _____
____ LERC	7.	Forward this attachment to the Emergency Preparedness Manager.
____ EPM	8.	Ensure that offsite (state and local) reporting requirements have been met.
____ EPM	9.	Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.

NRC DATA SHEET (Page 1 of 2)

NOTIFICATION TIME	FACILITY: SALEM GENERATING STATION	CALLER'S NAME	
EVENT DATE	EVENT TIME EASTERN TIME ZONE	POWER / MODE BEFORE EVENT	POWER / MODE AFTER EVENT

EVENT CLASSIFICATION (Check One)

☐	GENERAL EMERGENCY	☐	ALERT	☐	1HR 10CFR50.72(b)(1) *( )	☐	1HR SECURITY / SAFEGUARDS
☐	SITE AREA EMERGENCY	☐	UNUSUAL EVENT	☐	4HR 10CFR50.72(b)(2) *( )	☐	TRANSPORTATION EVENT
☐	OTHER (DESCRIBE):						

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITON STATEMENT.

EVENT DESCRIPTION

Include systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc. Note anything unusual or not understood. Indicate systems and safety-related equipment that are not operational.

(Use back if more room is needed)

RCS/TUBE LEAK DATA (Complete only if event includes an RCS or SG tube leak)

LOCATION OF LEAK (e.g. SG, VALVE, PIPE, etc.) : _____

TIME & DATE LEAK STARTED: _____ (TIME) ON _____ (DATE)

LEAK RATE: _____ gpm or gpd. T/S LEAK LIMITS: _____

LAST KNOWN COOLANT ACTIVITY: PRIMARY (DEI - μCi/cc) _____ SECONDARY (GBG - μCi/cc) _____

WAS THIS LEAK A SUDDEN OR LONG-TERM DEVELOPMENT? _____

NOTIFICATIONS

ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE	ORGANIZATION NOTIFIED	YES	NO	WILL BE
NRC RESIDENT				STATE OF NEW JERSEY				STATE OF DELAWARE			
LOCAL (LAC TOWNSHIP)				OTHER GOVERNMENT AGENCIES				MEDIA / PRESS RELEASE			
MODE OF OPERATION UNTIL CORRECTED: ____				ESTIMATED RESTART DATE: _____				ADDITIONAL INFO ON PAGE 2?			

ADDITIONAL INFORMATION FOR TELECOPY E:
ECG SECTION _____ INITIATING CONDITION _____

EC APPROVAL TO TRANSMIT

NRC DATA SHEET (Page 2 of 2)

MESSAGE DATE/TIME: _____

RADIOLOGICAL RELEASE DATA: (This section is only required to be completed if a release exceeding Tech Specs is in progress or has already occurred).

Check ✓ correct statements and provide to the NRC.

____ There is a gaseous release above Tech Spec limits in progress (Tech Spec Limit: Noble Gas = 2.37E+05 μCi/sec).
____ There is an Iodine release above Tech Spec limits in progress (Tech Spec Limit: Iodine = 2.10E+01 μCi/sec).
____ There is a liquid release above Tech Spec limits in progress.
____ The release is ongoing (still above Tech Specs) at this time.
____ The release was terminated (no longer above Tech Specs) at _____hrs.
____ The release is/was planned and can be isolated.
____ The release pathway is monitored by the Radiation Monitoring System.
____ Areas evacuated onsite due to release concerns are: _____
____ Station personnel have received exposure above 10CFR20 limits.
____ Station personnel have been contaminated to an extent requiring offsite assistance to decon.

SPECIFIC RADIOLOGICAL PARAMETERS: (Provide current values)

The Noble Gas release rate (from SSCL) is: _____ μCi/sec.
The Iodine release rate (from SSCL) is: _____ μCi/sec.

RELEASE PATHWAY MONITORS: (Provide monitor reading with units and alarm setpoint only for those below listed monitors in Alarm).

Monitor # and Name		Current Reading	Alarm Setpoint
R41B	Plant Vent Iodine	_____ cpm	8.33E+04 cpm
R41C	Normal Plant Vent Gas	_____ cpm	1.14E+04 cpm
R45B	Mid Plant Vent Gas	_____ μCi/cc	3.00E−02 μCi/cc
R45C	High Plant Vent Gas	_____ μCi/cc	1.00E+02 μCi/cc
R46	Highest Steam Line (R46A thru D)	_____ mR/hr	1.00E+01 mR/hr
R15	Condenser Air Ejector	_____ cpm	_____ cpm
R19	Highest S/G Blowdown	_____ cpm	_____ cpm

NRC EVENT UPDATE: (Document additional information provided to NRC due to their request or as a result of plant/event status changes).

(Use back if more room is needed)

_____
EC APPROVAL TO TRANSMIT

SPILL/DISCHARGE NOTIFICATION FORM

Primary phone # to NJDEPE: (609) 292-7172
Backup phone # to NJSP: 609-882-2000

To contact NJDEPE Operator use the above phone numbers. When you are prompted by the voice answering machine, select 5 for reporting non-emergency releases and an operator will come on the line to take the report.

Record time contact is made with NJDEPE operator:_____ and provide the following information:
time

This is notification of a **Spill/Discharge.**

This is (name)_____, from Salem Generating Station.
My call back phone # is 609-339-5200.

The Spill/Discharge location is: (provide specific location)

_____

at Artificial Island Nuclear Generating Station located at the Foot of Buttonwood Road, Lower Alloways Creek Township in Salem County.

The Common name for the spilled/discharged substance is _____, and we estimated the quantity spilled to be _____, and the substance HAS or HAS NOT been contained,

	time		date
The discharge/spill began at:	_____	on	_____
The spill/discharge discovered at:	_____	on	_____
The spill/discharge ended at:	_____	on	_____

A description of the Incident is: _____

_____

Ongoing actions to contain/clean up the spill are: _____

_____

The Wind Speed is (33 ft): _____ mph from _____degrees.
If spill is not PSE&G's responsibility, provide the following info:
Responsible person(s): _____
Company Name, Address and Phone # :_____

May I have your Operator number please? _____

May I have our case number please?_____

ATTACHMENT 17

- FOUR HOUR REPORT -
FATALITY OR MEDICAL EMERGENCY

Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

INITIALS

____ SNSS 1. If not done previously implement SC.FP-EO.ZZ-0003(Z), "Control Room Medical Emergency Response."

> Note:
> If personnel contamination is involved see ECG Section 15 Initiating Condition A.

> NOTE:
> Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

____ SNSS 2. Complete the NRC Data Sheet with initial data available (pages 6 and 7 of this attachment).

____ SNSS 3. Notify **Operations Manager** and confirm classification of event. ECG Section _____Initiating Condition_____. (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

____ SNSS 4. Notify **LAC Dispatcher** of event. (Phone numbers are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

INITIALS

____ 5. Notify **NRC Operations Center** of the event **within four**
SNSS **hours.** Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

____ 6. Notify **Public Information Manager - Nuclear** or alternate
SNSS with details of event: (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

____ 7. Notify **Telecopy Group E** by transmitting the NRC Data
SNSS Sheet. If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9)

_____notified at_____hrs on_____
name time date

____ 8. If transport of injured to offsite medical facility is
SNSS required, notify the **Safety Coordinator.** (Contact one)

	WORK#	HOME#	PAGER#
Cliff Knaub	2812	(609)358-3074	478-5706
John Hornor	2965	(609)678-6308	342-5866
Soren Thomassen	2813	(302)834-5611	573-4706
Paul Eldreth	2828	(609)299-4489	342-5858

_____notified at_____hrs on_____
name time date

9. For serious injury or death of a Nuclear Department employee:

____ A. Notify the **Admin Services Manager** or representative
SNSS with information requested on page 5 of this attachment.

_____notified at_____hrs on_____
name time date

INITIALS

____ SNSS B. Notify the employee's department manager of the event and direct the department manager to coordinate notification of the employee's family.

_____ notified at _____ hrs on _____
name time date

____ SNSS 10. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

II. REPORTING

INITIALS

____ SNSS 1. Ensure that an Injury Report is completed.

____ SNSS 2. Ensure that an Incident Report (IR) is prepared.

____ SNSS 3. Forward this attachment, along with the Incident Report and any other supporting documentation, to the Operations Manager.

____ OM 4. Review Incident Report and any other available information for correct classification of event and corrective action taken.

____ OM 5. Contact the LER Coordinator and request that the required written reports be prepared. Provide this attachment and any other supporting documentation received from the SNSS.

Report(s) required _____IAW_____

_____IAW_____

____ LERC 6. Prepare required reports. ECG Attachment 23 may be used as a guide for reporting requirements.

Report or LER Number _____

____ LERC 7. Forward this attachment to the Emergency Preparedness Manager.

____ EPM 8. Ensure that offsite (state and local) reporting requirements have been met.

____ EPM 9. Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.

REPORT OF SERIOUS INJURY/DEATH
NUCLEAR DEPARTMENT EMPLOYEE

EMPLOYEE INFORMATION

NAME _____ EMPLOYEE # _____ AGE _____

HOME ADDRESS _____

HOME PHONE # _____ MARITAL STATUS _____

JOB TITLE _____ LOCATION _____

SOCIAL SECURITY # _____

ACCIDENT/INJURY DESCRIPTION

DATE OF ACCIDENT _____ TIME _____ AM/PM

DID INJURIES RESULT IN DEATH ☐ YES ☐ NO

EXTENT OF INJURIES _____

_____

_____

DESCRIPTION OF ACCIDENT _____

_____

_____

WHERE TAKEN AFTER ACCIDENT _____

_____

Admin Services Department Representatives (Contact One)

	Work#	Home#	Pager#
Linda Vreeland	1195	609-678-9382	478-5717
Dick DeSanctis	1550	609-228-1778	N/A

NRC DATA SHEET
(Page 1 of 2)

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	TELEPHONE NUMBER (FOR CALL BACK)

EVENT TIME & ZONE	EVENT DATE
POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATION (Check One)

	GENERAL EMERGENCY	*		1HR	10CFR50.72(b)(1) ( )
	SITE AREA EMERGENCY	*		4HR	10CFR50.72(b)(2) ( )
	ALERT			1HR	SECURITY/SAFEGUARDS
	UNUSUAL EVENT				TRANSPORTATION EVENT
					OTHER:

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITION STATEMENT.

EVENT DESCRIPTION

Include Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE					
NRC RESIDENT				ANYTHING UNUSUAL OR NOT UNDERSTOOD?		YES (Explain above)		NO
STATE(s) (NJ) (DEL)				DID ALL SYSTEMS FUNCTION AS REQUIRED?		YES		NO (Explain above)
LOCAL (LACT)								
OTHER GOV. AGENCIES				MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:		ADDITIONAL INFO ON PAGE 2?	
MEDIA/PRESS RELEASE								

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

APPROVED FOR TRANSMITTAL: _____
SNSS

NRC DATA SHEET
(Page 2 of 2)

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

	LIQUID RELEASE		GASEOUS RELEASE		UNPLANNED RELEASE		PLANNED RELEASE		ONGOING		TERMINATED
	MONITORED		UNMONITORED		OFFSITE RELEASE		T.S. EXCEEDED		RM ALARMS		AREAS EVACUATED
	PERSONNEL EXPOSED OR CONTAMINATED				OFFSITE PROTECTIVE ACTIONS RECOMMENDED		State release path in description.				

RELEASE TYPE	Release Rate (μCi/sec)	T.S. LIMIT	% T.S. LIMIT	Total Activity (μCi)	T.S. LIMIT	% T.S. LIMIT
Noble Gas						
Iodine						
Particulate						
Liquid (excluding tritium & dissolved noble gases)						
Liquid (Tritium)						
TOTAL ACTIVITY						

RELEASE PATHWAY	PLANT VENT	CONDENSER/AIR EJECTOR	MAIN STEAM LINE	SG BLOWDOWN	OTHER
RAD MONITOR READINGS & UNITS				N/A	
ALARM SETPOINTS				N/A	
% T.S. LIMIT (if applicable)				N/A	

RCS OR SG TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

LOCATION OF THE LEAK (e.g. SG, valve, pipe, etc.)

LEAK RATE:	UNITS: gpm/gpd	T.S. LIMITS:	SUDDEN OR LONG TERM DEVELOPMENT?
			SUDDEN / LONG TERM
LEAK START DATE: TIME:		COOLANT ACTIVITY & UNITS: PRIMARY –	SECONDARY –

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL:

NRC EVENT UPDATE:

APPROVED FOR TRANSMITTAL: _____
SNSS

ATTACHMENT 18

FOUR HOUR REPORT
RADIOLOGICAL TRANSPORTATION ACCIDENT

NOTES:

A. Refer to Attachment 9, Non-Emergency Notification Reference, for current listing of individuals and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS:

_____ SNSS 1. Complete the ACCIDENT NOTIFICATION FORM with initial details received regarding the accident, (page 6 of this attachment).

_____ SNSS 2. Obtain a copy of the Radwaste Shipping document that pertains to this event for reference during subsequent notifications.

_____ SNSS 3. Notify the **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition_____. (Contacts are listed in Attachment 9)

_____ notified at _____hrs on _____.
name time date

_____ SNSS 4. In the event that PSE&G is the carrier, (driver is a PSE&G employee), notify the **Department of Transportation** (DOT) at 1-800-424-8802 and provide all information recorded on the ACCIDENT NOTIFICATION FORM that was completed as directed above. Record any additional information requested by the DOT.

_____ notified at _____hrs on _____.
name time date

_____ SNSS 5. Notify the **Rad/Pro - Chemistry Manager** (or alternate) and direct him/her to contact the carrier's dispatcher and coordinate assistance in implementing PSE&G's Response as required. (contacts are listed in Attachment 9)

_____ notified at _____hrs on _____.
name time date

_____ SNSS 6. Complete the NRC Data Sheet with initial data available, (pages 4 and 5 of this attachment).

INITIALS

_____ 7. Notify **Public Information Manager - Nuclear** with details
SNSS of event. (Contacts are listed in Attachment 9)

_____ notified at _____hrs on _____.
name time date

_____ 8. Notify **NRC Operations Center** of the event **within 4 hours.**
SNSS Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are in Attachment 9).

_____ notified at _____hrs on _____.
name time date

_____ 9. Notify the **NRC Resident Inspector.** (Contacts are listed in
SNSS Attachment 9).

_____notified at _____hrs on _____.
name time date

_____10. Notify Telecopier Group E by transmitting the NRC Data Sheet
SNSS and Accident Notification Form.

If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9).

_____ notified at _____hrs on _____.
name time date

_____11. Notify **External Affairs** with details of the event.
SNSS (Contacts are listed in Attachment 9).

_____ notified at _____hrs on _____.
name time date

II. REPORTING

_____ SNSS 1. Ensure that an Incident Report (IR) is prepared.

_____ SNSS 2. Forward this attachment, along with the IR and any supporting documentation to the Operations Manager.

_____ OM 3. Review the IR and any other available information for correct event classification and corrective action taken.

_____ OM 4. Contact the LER Coordinator and request written followup **(may be 30 day LER or 15 day report per 49 CFR 171.16).** Provide this attachment and all other supporting documentation.

_____ LERC 5. Prepare required reports. ECG Attachment 23 may be used as a guide for reporting requirements.

Report or LER Number _____.

_____ LERC 6. Forward this attachment to the Emergency Preparedness Manager.

_____ EPM 7. Ensure that offsite (state and local) reporting requirements have been met.

_____ EPM 8. Forward this attachment and any supporting documentation received to the Central Technical Document Room (CTDR) for microfilming.

NRC DATA SHEET
(Page 1 of 2)

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	TELEPHONE NUMBER (FOR CALL BACK)

EVENT TIME & ZONE	EVENT DATE
POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATION (Check One)

	GENERAL EMERGENCY	*		1HR	10CFR50.72(b)(1) ( )
	SITE AREA EMERGENCY	*		4HR	10CFR50.72(b)(2) ( )
	ALERT			1HR	SECURITY/SAFEGUARDS
	UNUSUAL EVENT				TRANSPORTATION EVENT
					OTHER:

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITION STATEMENT.

EVENT DESCRIPTION

Include Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE			
NRC RESIDENT				ANYTHING UNUSUAL OR NOT UNDERSTOOD?	YES (Explain above)	NO
STATE(s) (NJ) (DEL)				DID ALL SYSTEMS FUNCTION AS REQUIRED?	YES	NO (Explain above)
LOCAL (LACT)						
OTHER GOV. AGENCIES				MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:	ADDITIONAL INFO ON PAGE 2?
MEDIA/PRESS RELEASE						

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

APPROVED FOR TRANSMITTAL: _____
SNSS

Rev. 1

SGS

NRC DATA SHEET
(Page 2 of 2)

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

	LIQUID RELEASE		GASEOUS RELEASE		UNPLANNED RELEASE		PLANNED RELEASE		ONGOING		TERMINATED
	MONITORED		UNMONITORED		OFFSITE RELEASE		T.S. EXCEEDED		RM ALARMS		AREAS EVACUATED
	PERSONNEL EXPOSED OR CONTAMINATED				OFFSITE PROTECTIVE ACTIONS RECOMMENDED		State release path in description.				

RELEASE TYPE	Release Rate (Ci/sec)	T.S. LIMIT	% T.S. LIMIT	Total Activity (Ci)	T.S. LIMIT	% T.S. LIMIT
Noble Gas						
Iodine						
Particulate						
Liquid (excluding tritium & dissolved noble gases)						
Liquid (Tritium)						
TOTAL ACTIVITY						

RELEASE PATHWAY	PLANT VENT	CONDENSER/AIR EJECTOR	MAIN STEAM LINE	SG BLOWDOWN	OTHER
RAD MONITOR READINGS & UNITS					
ALARM SETPOINTS					
% T.S. LIMIT (if applicable)					

RCS OR SG TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

LOCATION OF THE LEAK (e.g. SG, valve, pipe, etc.)

LEAK RATE:	UNITS: gpm/gpd	T.S. LIMITS:	SUDDEN OR LONG TERM DEVELOPMENT?			
				SUDDEN		LONG TERM
LEAK START DATE:	TIME:	COOLANT ACTIVITY & UNITS: PRIMARY –			SECONDARY –	

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL:

EVENT DESCRIPTION
(Continued from Page 1)

APPROVED FOR TRANSMITTAL: _____
SNSS

RADIOLOGICAL TRANSPORTATION ACCIDENT NOTIFICATION FORM

NOTE:
A. The SNSS should use this form to obtain minimum information required for an effective PSE&G response.
B. Record any additional information available.
C. Implement ECG if not already in progress.

1. Time call received: _____
2. Name of caller: _____
3. Is the caller the driver? YES or NO_____

   If YES, Trucking company name: _____

   If NO, Status of Driver: _____
4. Phone # call is coming from: _____
5. Location of Accident: State _____

   City/Town _____

   Roadway _____
6. Local or State police on scene? Yes or No_____
7. Number of vehicles involved? 1-2-3-4-5 _____
8. Any personnel injuries? Yes or No_____
9. Any fire involving truck contents? Yes or No_____
10. Trucking Company Dispatcher called? Yes or No_____
11. Extent of damage to truck/trailer, container and contents:

    _____

    _____
12. **Ask Caller to do the following:**

    A. If not yet done, notify State or Local police.

    B. If possible, ensure assistance personnel at the accident scene do the following:

    1. Take all practical measures to protect life and property, then stay back and wait for personnel trained to respond to emergencies.

    2. Remain upwind of the accident and do not track through any spills.

ATTACHMENT 19

TWENTY-FOUR HOUR REPORT
SIGNIFICANT FITNESS FOR DUTY EVENTS

NOTES:
A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.
B. Each step shall be initialed by the responsible individual when completed.

```
*************************************************************
*                          CAUTION                          *
*                                                           *
* THE DETERMINATION OF REPORTABILITY OF SIGNIFICANT FFD     *
* EVENTS IS THE RESPONSIBILITY OF THE MEDICAL REVIEW        *
* OFFICER (MRO).                                            *
*                                                           *
* IN ORDER TO ENSURE COMPLIANCE WITH NRC NOTIFICATION       *
* REQUIREMENTS OF 10CFR26.73 AND ALSO PROTECT THE           *
* RIGHTS OF THE INDIVIDUAL(S) INVOLVED INFORMATION          *
* PROVIDED TO ANY OF THE BELOW CONTACTS MUST BE LIMITED     *
* TO THAT SUPPLIED BY THE MRO OR DESIGNEE.                  *
*************************************************************
```

I NOTIFICATIONS:

____ SNSS 1. Complete the significant FFD event report form (page 3 of this attachment) with the details received from the **Medical Review Officer** or designee per NC-NA-AP.ZZ-0042(Q).

____ SNSS 2. Notify the **Operations Manager** and confirm classification of event. ECG Section 16 Initiating Condition I. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 3. Notify **NRC Operations Center** of the event **within 24 hours** of the time of discovery provided by the MRO. (Phone numbers are in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 4. Notify **NRC Resident Inspector.** (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

II. REPORTING

```
*********************************************
*                  CAUTION:                 *
*                                           *
* ALL RECORDS OF THIS REPORT MUST BE HANDLED *
* AS CONFIDENTIAL.                          *
*********************************************
```

____ 1. Ensure that an Incident Report (IR) is prepared.
SNSS

____ 2. Forward this attachment, along with the IR and any supporting documentation, to the Operations Manager.
SNSS

____ 3. Review IR and any other available information for correct classification of event and corrective action taken.
OM

____ 4. Forward this attachment to the **Medical Review Officer** at the Processing Center MC - N06.
OM

____ 5. Retain this information on file in accordance with the Nuclear Medical Department Standard Operating Procedures and ensure that this event is included in the 6 month FFD report to the NRC.
MRO

CONFIDENTIAL
SIGNIFICANT FITNESS FOR DUTY EVENT
NRC NOTIFICATION REPORT FORM

NOTES:

A. The SNSS should use this form to document the details of any FFD event determined by the Medical Review Officer (MRO) to be reportable per 10CFR26.73.
B. This initial report to the NRC must be completed within 24 hours from the time of discovery by the licensee as determined by the MRO.
C. If the NRC requires additional or more detailed information the NRC FFD Representative shall directly contact the MRO. (See item #1 below).

NRC NOTIFICATION:
Notification Time: _____ SNSS (name) _____
Facility: Salem/Hope Creek Call back phone # 609-339-_____

EVENT DETAILS:

1. Medical Review Officer or designee: _____ (name)
   Call back phone # 609-339-5600
   MRO Beeper: 609-573-4588

2. Reporting Event (check one)

___ Sale, use, or possession of illegal drugs <u>within</u> the **Protected Area.** [10CFR26.73(a)(1)]

Any acts, by **Licensed Reactor Operators, Security Force Members, or Supervisory personnel:** [10CFR26.73(a)(2)]
___ Involving the sale, use, or possession of a controlled substance. (i)
___ Resulting in a confirmed positive test on such persons. (ii)
___ Involving use of alcohol <u>within</u> the **Protected Area.** (iii)
___ Resulting in the determination of unfitness for scheduled work due to consumption of alcohol. (iv)

3. Discovery Time: _____ hrs on _____ (date)

4. Work Dept. of individual(s): _____

5. Has plant safety been affected ? YES ___ NO ___

6. Corrective actions taken or planned ? _____
   _____
   _____

7. Other pertinent information: _____
   _____
   _____

ATTACHMENT 20

TWENTY-FOUR HOUR REPORT
NRC REGIONAL OFFICE

NOTES:

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

____ SNSS 1. Notify the **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition _____ (Contacts are listed in Attachment 9).

____ SNSS 2. Complete the NRC Data Sheet with initial data available (pages 4 and 5 of this attachment).

____ SNSS 3. Notify **NRC Region I Office** of the event **(within 24 hours)**. Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 4. Notify **NRC Resident Inspector.** (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

Initials

____ SNSS 5. Notify **NRC Operations Center** of the event **within 24 hours.** Use NRC Data Sheet to record additional information provided to the NRC. (Phone numbers are in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 6. Notify **Public Information Manager - Nuclear** or alternate with details of event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 7. Notify **Telecopy Group E** by transmitting the NRC Data Sheet

If transmission is incomplete, notify the **Emergency Preparedness Representative** with the description of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 8. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

II. REPORTING

____ SNSS 1. Ensure that an Incident Report (IR) is prepared.

____ SNSS 2. Forward this attachment, along with the IR and any supporting documentation, to the Operations Manager.

____ OM 3. Review IR and any other available information for correct classification of event and corrective action taken.

____ OM 4. Contact the LER Coordinator and request written followup reports. Provide this attachment and any other supporting documentation received from the SNSS.

____ LERC 5. Prepare required reports. ECG Attachment 23 may be used as a guide for reporting requirements.

Report or LER Number _____

____ LERC 6. Forward this attachment to the Emergency Preparedness Manager.

____ EPM 7. Ensure that offsite (state and local) reporting requirements have been met.

____ EPM 8. Forward this attachment and any supporting documentation received to the Central Technical Document Room (CTDR) for microfilming.

NRC DATA SHEET
(Page 1 of 2)

NOTIFICATION TIME	FACILITY OR ORGANIZATION	UNIT	CALLER'S NAME	TELEPHONE NUMBER (FOR CALL BACK)

EVENT TIME & ZONE	EVENT DATE
POWER/MODE BEFORE	POWER/MODE AFTER

EVENT CLASSIFICATION (Check One)

	GENERAL EMERGENCY	*		1HR	10CFR50.72(b)(1) ( )
	SITE AREA EMERGENCY	*		4HR	10CFR50.72(b)(2) ( )
	ALERT			1HR	SECURITY/SAFEGUARDS
	UNUSUAL EVENT				TRANSPORTATION EVENT
					OTHER:

* FOR NON-EMERGENCIES PROVIDE THE SPECIFIC SUBPART NUMBER OF THE 10CFR50.72 REPORTING REQUIREMENT FROM THE ECG INITIATING CONDITION STATEMENT.

EVENT DESCRIPTION

Include Systems affected, actuations & their initiating signals, causes, effect of event on plant, actions taken or planned, etc.

NOTIFICATIONS	YES	NO	WILL BE			
NRC RESIDENT				ANYTHING UNUSUAL OR NOT UNDERSTOOD?	YES (Explain above)	NO
STATE(s) (NJ) (DEL)				DID ALL SYSTEMS FUNCTION AS REQUIRED?	YES	NO (Explain above)
LOCAL (LACT)						
OTHER GOV. AGENCIES				MODE OF OPERATION UNTIL CORRECTED:	ESTIMATE FOR RESTART DATE:	ADDITIONAL INFO ON PAGE 2?
MEDIA/PRESS RELEASE						

ADDITIONAL INFORMATION FOR TELECOPY E

ECG Section _____ Initiating Condition _____

APPROVED FOR TRANSMITTAL: _____
SNSS

NRC DATA SHEET
(Page 2 of 2)

RADIOLOGICAL RELEASES: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

	LIQUID RELEASE		GASEOUS RELEASE		UNPLANNED RELEASE		PLANNED RELEASE		ONGOING		TERMINATED
	MONITORED		UNMONITORED		OFFSITE RELEASE		T.S. EXCEEDED		RM ALARMS		AREAS EVACUATED
	PERSONNEL EXPOSED OR CONTAMINATED				OFFSITE PROTECTIVE ACTIONS RECOMMENDED		State release path in description.				

RELEASE TYPE	Release Rate (Ci/sec)	T.S. LIMIT	% T.S. LIMIT	Total Activity (Ci)	T.S. LIMIT	% T.S. LIMIT
Noble Gas						
Iodine						
Particulate						
Liquid (excluding tritium & dissolved noble gases)						
Liquid (Tritium)						
TOTAL ACTIVITY						

RELEASE PATHWAY	PLANT VENT	CONDENSER/AIR EJECTOR	MAIN STEAM LINE	SG BLOWDOWN	OTHER
RAD MONITOR READINGS & UNITS					
ALARM SETPOINTS					
% T.S. LIMIT (if applicable)					

RCS OR SG TUBE LEAKS: CHECK OR FILL IN APPLICABLE ITEMS (specific details/explanations should be covered in event descripton)

LOCATION OF THE LEAK (e.g. SG, valve, pipe, etc.)

LEAK RATE:	UNITS: gpm/gpd	T.S. LIMITS:	SUDDEN OR LONG TERM DEVELOPMENT?	
			SUDDEN	LONG TERM

LEAK START DATE: TIME: COOLANT ACTIVITY & UNITS: PRIMARY – SECONDARY –

LIST OF SAFETY RELATED EQUIPMENT NOT OPERATIONAL:

EVENT DESCRIPTION
(Continued from Page 1)

APPROVED FOR TRANSMITTAL: _____
SNSS

ATTACHMENT 21

- REPORTABLE EVENT-
LACT/MEMORANDUM OF UNDERSTANDING

NOTES:

A. Refer to Attachment 9, Non-Emergency Notifications Reference, for the currect listing of individuals and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. NOTIFICATIONS

_____ SNSS 1. Provide event description: _____

_____

_____

_____ SNSS 2. Notify **Operations Manager** and confirm classification of event. ECG Section _____ Initiating Condition ____ (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 3. Notify **LAC Dispatcher** of event. (Phone numbers are in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 4. Notify **Public Information Manager - Nuclear** or Alternate with details of event: (Contacts are listed in Attachment 9)

_____ notified at _____ hrs on _____
name time date

_____ SNSS 5. Notify External Affairs with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

II. REPORTING

____ SNSS 1. Forward this attachment, along with any supporting documentation, to the Operations Manager.

____ OM 2. Review this attachment and any other available information for correct classification of event and corrective action taken.

____ OM 3. Contact the LER Coordinator and request that any of the required written reports be prepared. Provide this attachment and any other supporting documentation received from the SNSS.

____ LERC 4. Prepare required reports.

Formal report number_____

Other_____

____ LERC 5. Forward this attachment to the Emergency Preparedness Manager.

____ EPM 6. Ensure that offsite (state and local) reporting requirements have been met.

____ EPM 7. Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.

ATTACHMENT 22

- OTHER SPECIFICATION/OPERATIONS STATUS REVIEW -

NOTES:

A. Refer to Attachment 9, Non-emergency Notifications Reference, for the current listing of individuals and phone numbers.

B. Each step shall be initialed by the responsible individual when completed.

I. **NOTIFICATIONS**

_____ SNSS 1. Provide event description: _____

_____

_____

NOTE:

This attachment is for initiating an Engineering Evaluation required by Technical Specifications. Refer to the ECG Sections related to the initiating conditions of this event to determine if any NRC notifications are also required and implement the other referenced attachment in parallel with this one.

_____ SNSS 2. Notify **Operations Manager** and confirm classification of event. ECG Section _____Initiating Condition_____. (Contacts are listed in Attachment 9).

_____notified at_____ hrs on_____
name time date

NOTE:
An engineering analysis of this event is required.

INITIALS

____ SNSS 3. Notify **Technical Manager or Technical Engineer** with the details of this event. (contact one)

_____ notified at _____ hrs on _____
name time date

If unable to contact please note here.

____ SNSS 4. Notify **Public Information Manager - Nuclear** or Alternate with details of the event. (Contacts are listed in Attachment 9).

_____ notified at _____ hrs on _____
name time date

____ SNSS 5. Notify **External Affairs** with details of the event. (Contacts are listed in Attachment 9).

_____ notfied at _____ hrs on _____
name time date

II. REPORTING

____ SNSS 1. Ensure that an Incident Report (IR) is prepared.

____ SNSS 2. Forward this attachment, along with the IR and any supporting documentation, to the Operations Manager.

____ OM 3. Review IR and any other available information for correct classification of event and corrective action taken.

____ OM 4. Contact the LER Coordinator and request that the required written reports be prepared. Provide this attachment and any other supporting documentation received from the SNSS.

____ LERC 5. Prepare required reports. ECG Attachment 23 may be used as a guide for reporting requirements.

Report or LER Number _____

____ LERC 6. Forward this attachment to the Emergency Preparedness Manager.

____ EPM 7. Ensure that offsite (state and local) reporting requirements have been met.

____ EPM 8. Forward this Attachment/LER package to the Central Technical Document Room (CTDR) for microfilming.

CONTROL COPY # 101

ATTACHMENT 23

WRITTEN REPORTS/LERS/OTHER NOTES:

NOTE

This attachment lists additional off normal events for which the initiation of regulatory required written reports may be needed. Tech. Spec. references, as noted, are not always the same for Salem Unit 1 and 2. (Unit 2 numbers, if different are parenthesized).

The LER Coordinator will determine the proper reporting requirements to be met, the responsible department, and the actual reporting reference (i.e. Tech Specs or 10CFR) using the paraphrased event conditions of this attachment as a guide only.

SPECIAL REPORTS (10 - 15 DAYS)

A.01 Deleted per TS Amendment 166/148

A.02 Deleted per TS Amendment 166/148

A.03 Deleted per TS Amendment 166/148

A.04 IF the moderator temperature coefficient (MTC) is more positive than allowed, THEN prepare a 10 Day report per T.S.4.3.1.1.4a. (3.1.1.3a).

B.01 IF the number of operable process radiation monitoring instrumentation channels is less than the minimum channels operable requirements, THEN prepare a 14 Day report per T.S.3.3.3.1.

B.02 IF a Safety Limit has been violated, THEN prepare a Safety Limit Violation Report to be submitted within 14 Days per T.S.6.7.1.d. (see ECG Section 18).

C.01 IF an accident occurs during the transportation of licensed material, THEN prepare a 15 Day report that includes the results of an investigation pertaining to the accident per 10CFR71.5(a)(1)(v) and 49CFR171.16.

C.02 WHEN an inservice inspection of SG tubes is performed, THEN prepare a 15 Day Report per T.S.4.4.5.5a(4.4.6.5a) that provides the number of tubes plugged in each SG.

SPECIAL REPORTS (30 DAYS)

D.01 IF any incident in which an attempt has been made, or is believed to have been made, to commit a theft or unlawful diversion of special nuclear material

OR

to commit an act of radiological sabotage against the plant or transportation system, THEN prepare a 30 Day report per 10CFR73.71(b).

D.02 IF any exposure of an individual in excess of the following limits:

a)

Personnel	(no Form NRC-4)
TEDE	5 Rem/year
Skin	50 Rem/year
Extremities	50 Rem/year

b) Individuals under 18 years of age

10% of the limits specified in a), above.

THEN prepare a 30 Day report per 10CFR20.2203.

D.03 IF any exposure of a fetus/embryo of a declared pregnant woman exceeds 500 mRem, THEN prepare a 30 day report per 10CFR20.2203.

D.04 IF any incident which would result in an individual inhaling, ingesting or absorbing a quantity of uranium in excess of the limits specified in 10CFR20.1201E, THEN prepare a 30 Day report per 10CFR20.2203.

D.05 WHEN radiation exposure data is reported to an individual pursuient to a planned special exposure i.a.w 10CFR20.1206, THEN prepare a 30 Day report per 10CFR20.2204.

D.06 IF any incident results in an individual member of the public receiving a dose in excess of the limit specified in 10CFR20.1301, THEN prepare a 30 Day report per 10CFR20.2203.

D.07 If any incident in which levels of radiation or concentrations of radioactive materials, in an unrestricted area exceed 10 times the limits of 10CFR20, THEN prepare a 30 Day report per 10CFR20.2203.

D.08 IF levels of radiation or releases of radioactive material exceed limits specified in 40CFR190, THEN prepare a 30 Day report per 10CFR20.2203.

D.09 IF the calculated dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in Liquid Effluents exceeds:

1.5 mR to the total body or 5.0 mR to any organ during any calendar quarter

OR

3.0 mR to the total body or 10 mR to any organ during any calendar year, THEN prepare a 30 Day report per T.S. 3.11.1.2.

D.10 IF the projected dose to Unrestricted Areas when radioactive liquid waste is discharged is in excess of: 0.375 mR to the total body or 1.25 mR to any organ during any 31 day period

AND

any portion of the Liquid Radwaste Treatment System is not in operation, THEN prepare a 30 Day Report per T.S.3.11.1.3.

D.11 IF the calculated air dose from noble gas released in gaseous effluents exceeds: 5 mrad for gamma or 10 mrad for beta radiation during any calendar quarter

OR

10 mrad for gamma or 20 mrad for beta radiation during any calendar year, THEN prepare a 30 Day report per T.S. 3.11.2.2.

D.12 IF the calculated dose from release of I-131, I-133, tritium, and all radionuclides in particulate form with half-lives > 8 days in Gaseous Effluents exceeds:

7.5 mR to any organ during any calendar quarter

OR

15 mR to any organ during any calendar year, THEN prepare a 30 Day Report per T.S.3.11.2.3.

D.13 WHEN the projected gaseous effluent air doses due to releases from the site to areas at or beyond the MEA exceed 0.625 mrad for gamma or 1.25 mrad for beta radiation and those releases are being discharged without treatment, in lieu of an LER, THEN prepare a 30 Day report per T.S.3.11.2.4.

D.14 IF radioactive ventilation exhaust from the Reactor Bldg and Service and Radwaste Bldg is discharged without treatment

AND

the projected dose beyond the SITE BOUNDARY over any calendar quarter exceeds: 1.875 mR to any organ of a MEMBER OF THE PUBLIC, THEN prepare a 30 Day report per T.S.3.11.2.4.

D.15 IF the calculated total annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactive materials and to radiation from uranium fuel cycle sources exceeds:

25 mR to the total body or any organ except thyroid

OR

75 mR to the thyroid THEN prepare a 30 Day report per T.S.3.11.4.

D.16 IF the measured radioactivity concentration levels in environmental samples, resulting from plant effluents, exceeds the reporting thresholds of Table 3.12.1-2 when averaged over any calendar quarter, THEN prepare a 30 Day report per T.S.3.12.1b.

D.17 IF either the POPs or the RCS vent(s) are used to mitigate an RCS pressure transient, THEN prepare a 30 Day report per T.S.3.4.9.3 (3.4.10.3).

D.18 IF less than the minimum required fire detection instrumentation for each detection zone is OPERABLE

AND

the inoperable instrument(s) are not restored to an OPERABLE status within 14 days, THEN prepare a 30 Day report per T.S.3.3.3.6.

D.19 IF one pump and/or one water supply of the two fire suppression water systems becomes inoperable

AND

the inoperable equipment is not restored to an OPERABLE status within 7 days, THEN prepare a 30 Day report per T.S.3.7.10.1.

D.20 IF one or more of the required spray and/or sprinkler systems becomes inoperable

AND

the system is not restored to an OPERABLE status within 14 days, THEN prepare a 30 Day report per T.S.3.7.10.2.

D.21 IF one or more of the required low pressure CO2 systems becomes inoperable

AND

the system is not restored to an OPERABLE status within 14 days, THEN prepare a 30 Day report per T.S.3.7.10.3.

D.22 IF one or more of the required fire hose stations becomes inoperable,

AND

the fire hose station(s) is not restored to an OPERABLE status within 14 days, THEN prepare a 30 Day report per (T.S.3.7.10.4) (U2 only).

D.23 IF one or more of the required fire barrier penetrations becomes non-functional

AND

the non-functional fire barrier penetration is not restored to a functional status within 7 days, THEN prepare a 30 Day report per T.S.3.7.11.

D.24 IF the cumulative operating time at a primary coolant specific activity greater than or equal to 1.0 uCi/gram DEI-131 has exceeded 500 hours in any consecutive 6 month period, THEN prepare a 30 Day report per (T.S.3.4.9a)(U2 only).

D.25 IF any Emergency Diesel Generator failure occurs, valid or non-valid, THEN prepare a 30 Day report per (T.S.4.8.1.1.4) (U2 only) and NRC Regulatory Guide 1.108.

D.26 If a Reactor Trip Breaker (RTB) or Reactor Trip Bypass Breaker (RTBB) did not meet the acceptance criteria as per TS 3/4.3.1 Table 3.3-1 during surveillance/maintenance testing, prepare and submit a 30 day Special Report to the NRC. (Reference Amendment #114 and #96 to Facility Operating License).

LICENSEE EVENT REPORTS (LERS)

CAUTION

IN ADDITION TO LER REQUIREMENTS, THE BELOW EVENTS OR CONDITIONS MAY ALSO REQUIRE AN IMMEDIATE REPORT OR EMERGENCY DECLARATION. REFER TO THE ECG SECTIONS NOTED IN BRACKETS TO ENSURE TOTAL COMPLIANCE.

E.01 IF any event or condition that alone could have prevented the fulfillment of the safety function of structures or systems that are needed to:

(a) Shutdown the reactor and maintain it in a safe shutdown condition,

(b) Remove residual heat,

(c) Control the release of radioactive material, or

(d) Mitigate the consequences of an accident,

THEN prepare an LER per 10CFR50.73(a)(2)(v).

[Four Hour Report per 10CFR50.72(b)(2)(iii) see ECG Sections 3, 4, or 18]

NOTE

Events covered above may include one or more personnel errors, equipment failures, and/or discovery of design, analysis, fabrication, construction, and/or procedural inadequacies.

However, individual component failures need not be reported if redundant equipment in the same system was operable and available to perform the required safety function.

NOTE

10CFR50.72(b)(2)(iii)

a. A single failure in a component required to perform any of the above safety functions is reportable when there is sufficient reason to expect that the failure mechanism is one that could occur in a redundant component.

b. Multiple failures of redundant components of a safety system are sufficient reason to expect that the failure mechanism, event though not known, could prevent the fulfillment of the safety function.

For Example:

While the failure of a single rod to scram may not cause a reasonable doubt that other rods would scram, the failure of multiple rods to scram causes a reasonable expectation that other rods may also be affected, and thus, this is an event or condition that could prevent the fulfillment of the safety function, reactor scram.

E.02 IF an event where a single cause or condition resulted in at least one independent train or channel being inoperable in multiple systems,

OR

two independent trains or channels being inoperable in a single system designed to:

(a) Shutdown the reactor and maintain it in a safe shutdown condition,

(b) Remove residual heat,

(c) Control the release of radioactive material, or

(d) Mitigate the consequences of an accident,

THEN prepare an LER per 10CFR50.73(a)(2)(vii).

NOTE
For E.03 thru E.11 below, an LER shall be prepared per 10CFR50.73(a)(2) and the noted subsection thereof.

E.03 IF plant shutdown is completed as required by Technical Specifications; 10CFR50.73(a)(2)(i)(A) [see ECG Section 18]

E.04 IF any operation or condition prohibited by the plant's Tech Specs; (i)(B) [see ECG Section 18]

E.05 IF any deviation from the plant's Tech Specs authorized under 10CFR50.54(x) or the NRC's regulations; (i)(C) [see ECG Section 18]

E.06 IF any event or condition that resulted in the condition of the plant, including its principle safety barriers, being seriously degraded or resulted in the plant being:

In an unanalyzed condition that significantly compromised plant safety; (ii)(A)

In a condition that was outside the design basis of the plant; (ii)(B)

In a condition not covered by the plant's operating and emergency procedures. (ii)(C) [see ECG Section 18]

E.07 IF any natural phenomenon or other external condition that posed an actual threat to the safety of the plant or significantly hampered site personnel in the performance of duties necessary for the safe operation of the plant. 10CFR50.73(a)(2)(iii) [see ECG Sections 8, 12, and 13]

E.08 IF any event or condition that resulted in manual or automatic actuating of any Engineered Safety Feature (ESF), including the Reactor Protection System (RPS). However, actuation of an ESF (including RPS) that resulted from and was part of the preplanned sequence during testing or reactor operation need not be reported. 10CFR50.73(a)(2)(iv) [see ECG Section 18]

E.09 IF any airborne radioactivity release exceeds two times the applicable concentrations of the limits specified in Appendix B, Table II of 10CFR20 of the NRC's regulations in unrestricted areas, when averaged over a time period of one hour. 10CFR50.73(a)(2)(viii)(A) [see ECG Section 7]

E.10 IF any liquid effluent release that exceeded two times the limiting combined Maximum Permissible Concentration (MPC) (see Note 1 of Appendix B to 10CFR20) at the point of entry into the receiving water in an unrestricted area for all radionuclides except tritium and dissolved noble gases, when averaged over a time period of one hour. 10CFR50.73(a)(2)(viii)(B) [see ECG Section 7]

NOTE
10CFR50.73(a)(2)(ix)

Reports submitted to the NRC, i.a.w. paragraphs (viii)(A) and (viii)(B) above, also meet the effluent release reporting requirements of 10CFR20.

E.11 IF any event that posed an actual threat to the safety of the plant or significantly hampered site personnel in the performance of the duties necessary for the safe operation of the plant including fires, toxic gas releases, or radioactive releases. 10CFR50.73(a)(2)(x) [see ECG Sections 7, 8, or 14].

E.12 IF any violation of the requirements contained in the Operating License except those provisions of Section 2.C.(2) of the License, THEN prepare an LER per License Condition 2I. [See ECG Section 18]

E.13 IF the specific activity of the primary coolant is > 1.0 uCi/gram DEI-131 or > 100/E uCi/gram, 5], THEN prepare an LER per T.S.3.4.8 (3.4.9). [See ECG Section 5]

E.14 IF the results of steam generator tube inspections fall into Category C-3 and an engineering evaluation determines that it is reportable pursuant to 10CFR50.73, THEN prepare an LER per T.S.4.4.5.5 (4.4.6.5). [See ECG Section 18]

SPECIAL REPORTS (90 DAYS)

F.01 IF the ECCS is actuated and injects water into the Reactor Coolant System, [See ECG Section 18], THEN prepare a 90 Day Report per T.S.3.5.2 or 3.5.3. [See ECG Section 18]

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORTS

G.01 IF there are less than the minimum number of radioactive liquid effluent monitoring instrumentation channels OPERABLE

AND

best efforts are unsuccessful in returning the instrument(s) to OPERABLE status within 30 days, THEN explain in the next Semi-Annual Radioactive Release Report per T.S.3.3.3.8.

G.02 IF there are less than the minimum number of radioactive gaseous effluent monitoring instrumentation channels OPERABLE

AND

best efforts are unsuccessful in returning the instrument(s) to OPERABLE status within 30 days, THEN explain in the next Semi-Annual Radioactive Release Report per T.S.3.3.3.9.

G.03 IF milk or fresh leafy vegetable samples are unavailable from one or more of the sample locations required, THEN identify the cause of the unavailability of samples and the new location(s) for obtaining replacement samples in the next Semi-Annual Radioactive Release Report per T.S.3.12.2c.

G.04 IF a land use census is conducted that identifies a location(s) that yields a calculated dose or dose commitment greater than the values currently being calculated, THEN identify the new location(s) in the next Semi-Annual Radioactive Release Report per T.S.3.12.2.

G.05 IF a land use census is conducted that identifies a location(s) that yields a calculated dose or dose commitment (via the same exposure pathway) 20 percent greater than at a location from where samples are currently being obtained, THEN identify the new location(s) in the next Semi-Annual Radioactive Release Report per T.S.3.12.2.

ANNUAL REPORTS

H.01 IF sealed source or fission detector leakage tests reveal the presence of greater than or equal to 0.005 microcuries of removable contamination, THEN prepare (or include in, as appropriate) an Annual Report per T.S.4.7.8.1.3 (U1) or 4.7.8.3 (U2).

H.02 IF an inservice inspection of SG tubes is performed, THEN include the complete results in the Annual Operating Report per T.S.4.4.5.5.(4.4.6.5).

H.03 IF analysis has not been performed on radioactive materials supplied as part of the Interlaboratory Comparison Program, THEN report the corrective actions taken to prevent a recurrence in the Annual Radiological Environmental Operating Report per T.S.3.12.3.

H.04 IF the radiological environmental monitoring program is not being conducted as specified, THEN report the reasons and plans for preventing a recurrence in the Annual Radiological Environmental Operating Report per T.S.3.12.1.