

1

Offsite Rad Conditions

2

Onsite Rad Conditions & Spent Fuel Events

3

CR/CAS Rad

1

Natural or Destructive Phenomena

2

Fire or Explosion

3

Hazardous Gas

4

Security

5

Control Room Evacuation

6

Judgment

E

ISFSI

GENERAL EMERGENCY

None

RG1.21234D

Dose assessment using actual meteorology indicates doses > 1,000 mRem TEDE or 5,000 mRem thyroid CDE at or beyond the SITE BOUNDARY

RG1.31234D

Field survey results indicate closed window dose rates > 1,000 mRem/hr expected to continue for ≥ 60 min. at or beyond the SITE BOUNDARY (Note 1)

Analyses of field survey samples indicate thyroid CDE > 5,000 mRem for 1 hr of inhalation at or beyond the SITE BOUNDARY (Note 1)

SITE AREA EMERGENCY

RS1.11234D

ANY monitor reading > Table R-1 "SAE" column for ≥ 15 min. (Note 1)

Do not delay declaration awaiting dose assessment results

If dose assessment results are available, declaration should be based on dose assessment instead of radiation monitor values (see EAL RS1.2)

RS1.21234D

Dose assessment using actual meteorology indicates doses > 100 mRem TEDE or 500 mRem thyroid CDE at or beyond the SITE BOUNDARY

RS1.31234D

Field survey results indicate closed window dose rates > 100 mRem/hr expected to continue for ≥ 60 min. at or beyond the SITE BOUNDARY (Note 1)

Analyses of field survey samples indicate thyroid CDE > 500 mRem for 1 hr of inhalation at or beyond the SITE BOUNDARY (Note 1)

ALERT

RA1.11234D

ANY gaseous monitor reading > Table R-1 "Alert" column for ≥ 15 min. (Note 2)

RA1.21234D

ANY liquid monitor reading > Table R-1 "Alert" column for ≥ 15 min. (Note 2)

RA1.31234D

Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates > 200 x ODCM limits for ≥ 15 min. (Note 2)

None

None

UNUSUAL EVENT

RU1.11234D

ANY gaseous monitor reading > Table R-1 "UE" column for ≥ 60 min. (Note 2)

RU1.21234D

ANY liquid monitor reading > Table R-1 "UE" column for ≥ 60 min. (Note 2)

RU1.31234D

Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates > 2 x ODCM limits for ≥ 60 min. (Note 2)

None

None

Table R-1 Effluent Monitor Classification Thresholds

	Monitor	GE	SAE	ALERT	UE
GASEOUS	Stack (RN 10A/B)	N/A	N/A	3.0E4 cps	300 cps
	EC Vent	N/A	300 mRem/hr	30 mRem/hr	10 mRem/hr
LIQUID	SW Effluent	N/A	N/A	90,000 cpm	900 cpm
	RW Discharge	N/A	N/A	200 x batch	2 x batch

Table H-1 Safe Shutdown Areas

- Reactor Building (including Primary Containment)
- Control Room
- Screenhouse
- Turbine Building
- Battery Rooms
- Battery Board Rooms
- Cable Spreading Room
- Main Steam Isolation Valve Room
- Diesel Generator Engine and Board Rooms
- Security
- Central Alarm Station
- Secondary Alarm Station
- Security Uninterruptible Power Supply Room

Notes

- The ED should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition will likely exceed the applicable time
- The ED should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the release duration has exceeded, or will likely exceed, the applicable time. In the absence of data to the contrary, assume that the release duration has exceeded the applicable time if an ongoing release is detected and the release start time is unknown
- If loss of water level in the refueling pathway occurs while in Mode 3, 4 or D, consider classification under EALs CU3.1, CU3.2 or CU3.3
- The ED should not wait until the applicable time has elapsed, but should declare the event as soon as it is determined that the condition has exceeded, or will likely exceed, the applicable time.
- If the equipment in the stated area was already inoperable, or out of service, before the event occurred, then EAL HA3.1 should not be declared as it will have no adverse impact on the ability of the plant to safely operate or safely shutdown beyond that already allowed by Technical Specifications at the time of the event.

Constellation Energy

Nine Mile Plant Nuclear Station Unit 1

Approved: _____

Director, Emergency Planning

EP-EP-001

Attachment 1

EAL Matrix Unit 1

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Date: _____

1

Loss of AC Power

2

Loss of DC Power

3

Criticality & RPS Failure

4

Inability to Reach or Maintain Shutdown Conditions

5

Inst.

6

Comm.

7

Fuel Clad Degradation

8

RCS Leakage

F

Fission Product Barrier Degradation

GENERAL EMERGENCY

SG1.112

Loss of all offsite and all onsite AC power, Table S-1, to 4.16 kV emergency buses

AND EITHER

Restoration of at least one 4.16 kV emergency bus within 4 hours is not likely

OR

RPV water level cannot be restored and maintained above -84 in. or RPV water level cannot be determined

SITE AREA EMERGENCY

SS1.112

Loss of all offsite and all onsite AC power, Table S-1, to 4.16 kV emergency buses for ≥ 15 min. (Note 4)

AND

ANY additional single power source failure will result in a loss of all 4.16 kV emergency bus power

ALERT

SA1.112

AC power capability to 4.16 kV emergency buses reduced to a single power source, Table S-1, for ≥ 15 min. (Note 4)

AND

ANY additional single power source failure will result in a loss of all 4.16 kV emergency bus power

UNUSUAL EVENT

SU1.112

Loss of all offsite AC power, Table S-1, to 4.16 kV emergency buses for ≥ 15 min. (Note 4)

Table S-1 AC Power Sources

	Onsite	Offsite
Onsite	• DG 102	
Offsite	• T-101N	
	• T-101S	
	• T-10 backed from offsite through T-1 or T-2 (only if already aligned)	

Table S-2 Significant Transients

- Turbine runback > 25% thermal reactor power
- Electric load rejection > 25% full electrical load
- Reactor scram
- ECCS injection
- Thermal power oscillations > 10%

Table S-3 Communications Systems

System	Onsite (internal)	Offsite (external)
PBX (non dial telephones)	X	X
Gaitriconics	X	
Hand-Held Portable Radio (station radio)	X	
Control Room installed satellite phones (non portable)		X
ENS		X
RECS		X

Table F-1 Fission Product Barrier Matrix

	Fuel Clad Barrier		Reactor Coolant System Barrier		Containment Barrier	
	Loss	Potential Loss	Loss	Potential Loss	Loss	Potential Loss
A RPV Water Level	1. Primary Containment Flooding is required	1. RPV water level cannot be restored and maintained above -84 in. following depressurization of the RPV or RPV water level cannot be determined	1. RPV water level cannot be restored and maintained above -84 in. or RPV water level cannot be determined	None	None	1. Primary Containment Flooding is required
B Primary Containment Pressure / Temperature	None	None	2. Primary Containment pressure > 3.5 psig due to RCS leakage	None	1. Primary Containment pressure rise followed by a rapid UNPLANNED drop in Primary Containment pressure	2. Tonus pressure > 35 psig and rising
C Isolation	None	None	3. Release pathway exists outside Primary Containment resulting from isolation failure in ANY of the following systems (excluding normal process system flowpaths from an UNISOLABLE system): <ul style="list-style-type: none">Main steam lineEC steam lineRVCUFeedwater	1. UNISOLABLE primary system leakage outside Primary Containment as indicated by exceeding EITHER: <ul style="list-style-type: none">ANY N1-EOP-5 Detail T area temperature alarm setpointORANY N1-EOP-5 Detail R area radiation alarm setpoint	3. Failure of all Primary Containment isolation valves in ANY one line to close following auto or manual initiation	3. Explosive mixture exists inside Primary Containment (≥ 6% H ₂ and ≥ 5% O ₂)
D Rad	2. Drywell radiation ≥ 3,000 R/hr	None	5. Drywell radiation ≥ 80 R/hr	None	2. Tonus pressure > 35 psig and rising	4. Tonus water temperature and RPV pressure cannot be maintained below the Heat Capacity Temperature Limit (N1-EOP-4 Figure M)
E Judgment	4. ANY condition in the opinion of the Emergency Director that indicates loss of the Fuel Clad barrier	2. ANY condition in the opinion of the Emergency Director that indicates potential loss of the Fuel Clad barrier	6. ANY condition in the opinion of the Emergency Director that indicates loss of the Reactor Coolant System barrier	2. ANY condition in the opinion of the Emergency Director that indicates potential loss of the Reactor Coolant System barrier	5. UNISOLABLE primary system leakage outside Primary Containment as indicated by exceeding EITHER: <ul style="list-style-type: none">Maximum safe general area temperature of 135°FORMaximum safe area radiation of 8 R/hr	6. ANY condition in the opinion of the Emergency Director that indicates potential loss of the Containment barrier

EAL Identifier

XXX.X

Category (R, H, E, S, F, C)

Sequential number within subcategory/classification

Emergency classification (G, S, A, U)

Subcategory number (1 if no subcategory)

MODE 1 or 2