Abnormal Rad Levels / Radiological Effluents

Radiological Effluents

GENERAL EMERGENCY

RG1 1 2 3 4 5 D

Release of gaseous radioactivity resulting in offsite dose greater than 1,000 mRem TEDE or 5,000 mRem thyroid CDE.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.
- The pre-calculated effluent monitor values presented in EAL #1(Table R1) should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

1. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 15 minutes**.
   OR
2. Dose assessment using actual meteorology indicates doses at or beyond the site boundary of **EITHER**:
   a. **> 1000 mRem TEDE**
   OR
   b. **> 5000 mRem CDE Thyroid**
   OR
3. Field survey results at or beyond the site boundary indicate **EITHER**:
   a. Gamma (closed window) dose rates **> 1000 mR/hr** are expected to continue for **≥ 60 minutes**.
   OR
   b. Analyses of field survey samples indicate **> 5000 mRem CDE Thyroid** for **60 minutes** of inhalation.

SITE AREA EMERGENCY

RS1 1 2 3 4 5 D

Release of gaseous radioactivity resulting in offsite dose greater than 100 mRem TEDE or 500 mRem thyroid CDE.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.
- The pre-calculated effluent monitor values presented in EAL #1 (Table R1) should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

1. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 15 minutes**.
   OR
2. Dose assessment using actual meteorology indicates doses at or beyond the site boundary of **EITHER**:
   a. **> 100 mRem TEDE**
   OR
   b. **> 500 mRem CDE Thyroid**
   OR
3. Field survey results at or beyond the site boundary indicate **EITHER**:
   a. Gamma (closed window) dose rates **> 100 mR/hr** are expected to continue for **≥ 60 minutes**.
   OR
   b. Analyses of field survey samples indicate **> 500 mRem CDE Thyroid** for **60 minutes** of inhalation.

ALERT

RA1 1 2 3 4 5 D

Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem thyroid CDE.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.
- The pre-calculated effluent monitor values presented in EAL #1 (Table R1) should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

1. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 15 minutes**.
   OR
2. Dose assessment using actual meteorology indicates doses at or beyond the site boundary of **EITHER**:
   a. **> 10 mRem TEDE**
   OR
   b. **> 50 mRem CDE Thyroid**
   OR
3. Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than **EITHER** of the following at or beyond the site boundary.
   a. **10 mRem** TEDE for **60 minutes** of exposure.
   OR
   b. **50 mRem** CDE Thyroid for **60 minutes** of exposure.
   OR
4. Field survey results at or beyond the site boundary indicate **EITHER**:
   a. Gamma (closed window) dose rates **> 10 mR/hr** are expected to continue for **≥ 60 minutes**.
   OR
   b. Analyses of field survey samples indicate **> 50 mRem CDE Thyroid** for **60 minutes** of inhalation.

UNUSUAL EVENT

RU1 1 2 3 4 5 D

Release of gaseous or liquid radioactivity greater than 2 times the ODCM limits for 60 minutes or longer.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 60 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.

1. Reading on the Liquid Radwaste Effluent Monitor (17RM-350) **> 2 times hi-hi trip** for **≥ 60 minutes**.
   OR
2. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 60 minutes**.
   OR
3. Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates **> 2 times ODCM Limit** with a release duration of **≥ 60 minutes**.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

Table R1 Effluent Monitor Thresholds				
Effluent Monitor	**General Emergency**	**Site Area Emergency**	**Alert**	**Unusual Event**
Stack	7880 mR/hr	788 mR/hr	78.8 mR/hr	0.451 mR/hr (High Range Monitor)
Rx Bldg Exh	N/A	N/A	N/A	9.50E+05 cpm (Low Range Monitor)
Turb Bldg Exh	2.44 mR/hr	0.244 mR/hr	N/A	6.72E+05 cpm (Low Range Monitor)
Radw Bldg Exh	4.74 mR/hr	0.474 mR/hr	N/A	N/A
Refuel Floor Exh	N/A	N/A	N/A	9.28E+05 cpm (Low Range Monitor)

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT

Abnormal Rad Levels / Radiological Effluents

Radiological Effluents

RG2 1 2 3 4 5 D

Spent fuel pool level cannot be restored to at least 1.00 foot for 60 minutes or longer.

Emergency Action Levels (EAL):

Note: The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.

Spent fuel pool level cannot be restored to at least **1.00 foot** as indicated on19LI-60A or 19LI-60B for **≥ 60 minutes**.

Table R3
Areas Requiring Continuous Occupancy

- Main Control Room – (by survey)
- Central Alarm Station – (by survey)
- Secondary Alarm Station – (by survey)

RS2 1 2 3 4 5 D

Spent fuel pool level at 1.00 foot.

Emergency Action Level (EAL):

Lowering of spent fuel pool level to **1.00 foot** as indicated on 19LI-60A or 19LI-60B.

Table R2 Refuel Floor Radiation Monitors

- 18RIA-051-12 Spent Fuel Pool (EPIC A-1229)
- 18RIA-051-14 New Fuel Vault (EPIC A-1231)
- 18RIA-052-30 Refuel Floor West (EPIC A-1247)
- 17RIS-456A or B Refuel Floor Exhaust

Table R4
Areas with Entry Related Mode Applicability

Area	Entry Related Mode Applicability
• Reactor Building East Crescent • Reactor Building West Crescent • Reactor Building 272’ Elevation • Reactor Building 300’ Elevation • Relay Room • North Cable Room	Mode 3, 4, and 5

RA2 1 2 3 4 5 D

Significant lowering of water level above, or damage to, irradiated fuel.

Emergency Action Level (EAL):

1. Uncovery of irradiated fuel in the REFUELING PATHWAY.

   OR

2. Damage to irradiated fuel resulting in a release of radioactivity from the fuel as indicated by **ANY** Table R2 Radiation Monitor Alarm.

   OR

3. Lowering of spent fuel pool level to **11.00 feet** as indicated on 19LI-60A or 19LI-60B.

RA3 1 2 3 4 5 D

Radiation levels that impede access to equipment necessary for normal plant operations, cooldown or shutdown.

Emergency Action Level (EAL):

Note: If the equipment in the room or area listed in Table R4 was already inoperable, or out of service, before the event occurred, then no emergency classification is warranted.

1. Dose rate **> 15 mR/hr** in **ANY** of the areas in Table R3.

   OR

2. UNPLANNED event results in radiation levels that prohibit or significantly impede access to **ANY** of the areas in Table R4.

RU2 1 2 3 4 5 D

UNPLANNED loss of water level above irradiated fuel.

Emergency Action Level (EAL):

1. a. UNPLANNED water level drop in the REFUELING PATHWAY as indicated by **ANY** of the following:

   - Inability to restore and maintain Spent Fuel Pool water level **> low water level alarm.**

     OR

   - Indication or report of a drop in water level in the REFUELING PATHWAY.

   AND

   b. UNPLANNED Area Radiation Monitor reading rise on **ANY** Table R2 radiation monitor.

RU3 1 2 3

Reactor coolant activity greater than Technical Specification allowable limits.

Emergency Action Level (EAL):

1 Offgas radiation **≥ hi-hi alarm**

OR

2. Specific coolant activity **> 2.0 µCi/gm** I-131 dose equivalent.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT
FG1 Loss of ANY two barriers AND Loss or Potential Loss of third barrier. 1 2 3	**FS1** Loss or Potential Loss of ANY two barriers. 1 2 3	**FA1** ANY Loss or ANY Potential Loss of either Fuel Clad or RCS. 1 2 3

Sub-Category	FC – Fuel Clad		RC – Reactor Coolant System		CT - Containment	
	Loss	Potential Loss	Loss	Potential Loss	Loss	Potential Loss
1. RCS Activity	Coolant activity **> 300 uCi/gm** I-131 dose equivalent.	None	None	None	None	None
2. RPV Water Level	1. SAOG entry required	2. RPV water level **cannot** be restored and maintained **> 0 inches** (TAF). **OR** 3. RPV water level **cannot** be determined.	1. RPV water level **cannot** be restored and maintained **> 0 inches** (TAF). **OR** 2. RPV water level **cannot** be determined.	None	None	SAOG entry required
3. Primary Containment Pressure / Conditions	None	None	1. a. Primary Containment pressure **> 2.7 psig.** **AND** b. Primary Containment pressure rise is due to RCS leakage.	None	1. UNPLANNED rapid drop in Primary Containment pressure following Primary Containment pressure rise. **OR** 2. Primary Containment pressure response **not** consistent with LOCA conditions.	3. Primary Containment pressure **> 56 psig** and rising. **OR** 4. a. Primary Containment hydrogen concentration **≥ 6%.** **AND** b. Primary Containment oxygen concentration **≥ 5%.** **OR** 5. Heat Capacity Temperature Limit (HCTL) (EOP-11) exceeded.
4. RCS Leak Rate	None	None	1. UNISOLABLE Main Steam Line (MSL), HPCI, RWCU, RCIC, or Feedwater line break. **OR** 2. Emergency RPV Depressurization is required.	3. UNISOLABLE primary system leakage that results in **EITHER** of the following: a. Secondary Containment area temperature > **EOP-5 Maximum Normal** Operating Limit. **OR** b. Secondary Containment area radiation > **EOP-5 Maximum Normal** Operating Limit.	None	None
5. Primary Containment Radiation	Drywell radiation monitor reading **> 1.8E+03 R/hr (1800 R/hr).**	None	Drywell radiation monitor reading **> 63 R/hr.**	None	None	Drywell radiation monitor reading **> 1.8E+04 R/hr (18,000 R/hr).**
6. Primary Containment Isolation Failure	None	None	None	None	1. UNISOLABLE direct downstream pathway to the environment exists after Primary Containment isolation signal. **OR** 2. Intentional Primary Containment venting or purging per EOPs or SAOGs due to accident conditions. **OR** 3. UNISOLABLE primary system leakage that results in **EITHER** of the following: a. Secondary Containment area temperature > **EOP-5 Maximum Safe** Operating Limit. **OR** b. Secondary Containment area radiation > **EOP-5 Maximum Safe** Operating Limit.	None
7. Emergency Director Judgment	1. 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.	1. Any Condition in the opinion of the Emergency Director that indicates Loss of the RCS Barrier.	2. Any Condition in the opinion of the Emergency Director that indicates Potential Loss of the RCS Barrier.	1. Any Condition in the opinion of the Emergency Director that indicates Loss of the Containment Barrier.	2. Any Condition in the opinion of the Emergency Director that indicates Potential Loss of the Containment Barrier.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
System Malfunction			
Loss of AC Power **MG1** 1 2 3 Prolonged loss of all offsite and all onsite AC power to emergency buses. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. Loss of **ALL** offsite and onsite AC power to 4160 V emergency buses 10500 and 10600. **AND** 2. **EITHER** of the following: a. Restoration of at least one 4160 V emergency bus 10500 or 10600 in **< 4 hours** is **not** likely. **OR** b. RPV water level **cannot** be restored and maintained **> -19 inches (MSCRWL).**	**MS1** 1 2 3 Loss of all offsite and onsite AC power to emergency buses for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. Loss of **ALL** offsite and onsite AC power to 4160 V emergency buses 10500 and 10600. **AND** 2. Failure to restore power to at least one 4160 V emergency bus 10500 or 10600 in **< 15 minutes** from the time of loss of both offsite and onsite AC power.	**MA1** 1 2 3 Loss of all but one AC power source to emergency buses for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. AC power capability to 4160 V emergency buses 10500 and 10600 reduced to only one of the following power sources for **≥ 15 minutes.** • Reserve Station Transformer T-2 • Reserve Station Transformer T-3 • Station Service Transformer T-4 (While backfeeding from Main Transformer) • EDG A • EDG B • EDG C • EDG D • Main Generator via T-4 **AND** 2. **ANY** additional single power source failure will result in a loss of **ALL** AC power to SAFETY SYSTEMS.	**MU1** 1 2 3 Loss of all offsite AC power capability to emergency buses for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. Loss of **ALL** offsite AC power capability 4160 V emergency buses 10500 and 10600 for **≥ 15 minutes**. • Reserve Station Transformer T-2 • Reserve Station Transformer T-3 • Station Service Transformer T-4 (While backfeeding from Main Transformer)
Loss of DC Power **MG2** 1 2 3 Loss of all AC and Vital DC power sources for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. Loss of **ALL** offsite and onsite AC power to 4160 V emergency buses 10500 and 10600. **AND** 2. Voltage is **< 105 VDC** on Vital DC buses 71BCB-2A and 71BCB-2B**.** **AND** **3. Conditions** in EALs #1 and #2 have existed for **≥ 15 minutes.**	**MS2** 1 2 3 Loss of all Vital DC power for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. Voltage is **< 105 VDC** on Vital DC buses 71BCB-2A and 71BCB-2B for **≥ 15 minutes**.		

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
System Malfunction			
RPS Failure	**MS3** 1 2 Inability to shutdown the reactor causing a challenge to RPV water level or RCS heat removal. **Emergency Action Level (EAL):** 1. Automatic scram did **not** shutdown the reactor as indicated by Reactor Power **≥ 2.5%**. **AND** 2. **ALL** manual / ARI actions to shutdown the reactor have been unsuccessful as indicated by Reactor Power **≥ 2.5%**. **AND** 3. **EITHER** of the following conditions exist: • RPV water level **cannot** be restored and maintained **> -19 inches (MSCRWL).** **OR** • Heat Capacity Temperature Limit (HCTL) (EOP-11) exceeded.	**MA3** 1 2 Automatic or manual scram fails to shutdown the reactor, and subsequent manual actions taken at the Reactor Control Console are not successful in shutting down the reactor. **Emergency Action Level (EAL):** **Note:** A manual action is any operator action, or set of actions, which causes the control rods to be rapidly inserted into the core. This action does not include manually driving in control rods or implementation of boron injection strategies. 1. Automatic or manual scram did **not** shutdown the reactor as indicated by Reactor Power **≥ 2.5%**. **AND** 2. Manual / ARI actions taken at the Reactor Control Console are **not** successful in shutting down the reactor as indicated by Reactor Power **≥ 2.5%**.	**MU3** 1 2 Automatic or manual scram fails to shutdown the reactor. **Emergency Action Level (EAL):** **Note:** A manual action is any operator action, or set of actions, which causes the control rods to be rapidly inserted into the core. This action does not include manually driving in control rods or implementation of boron injection strategies. 1. a. Automatic scram did not shutdown the reactor as indicated by Reactor Power **≥ 2.5%**. **AND** b. Subsequent manual / ARI action taken at the Reactor Control Console is successful in shutting down the reactor as indicated by Reactor Power **< 2.5%.** **OR** 2. a. Manual scram did not shutdown the reactor as indicated by Reactor Power **≥ 2.5%**. **AND** b. **EITHER** of the following: 1. Subsequent manual / ARI action taken at the Reactor Control Console is successful in shutting down the reactor as indicated by Reactor Power **< 2.5%.** **OR** 2. Subsequent automatic scram / ARI is successful in shutting down the reactor as indicated by Reactor Power **< 2.5%.**
Control Room Indications **Table M1 Control Room Parameters** • Reactor Power • RPV Water Level • RPV Pressure • Primary Containment Pressure • Torus Level • Torus Temperature **Table M2 Significant Transients** • Auto/Manual runback > 25% thermal reactor power • Electric load rejection > 25% full electric load • Reactor Scram • ECCS actuation • Thermal Power oscillations > 10% (peak to peak)		**MA4** 1 2 3 UNPLANNED loss of Control Room indications for 15 minutes or longer with a significant transient in progress. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. UNPLANNED event results in the inability to monitor **ANY** Table M1 parameter from within the Control Room for **≥ 15 minutes.** **AND** 2. **ANY** Table M2 transient in progress.	**MU4** 1 2 3 UNPLANNED loss of Control Room indications for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. UNPLANNED event results in the inability to monitor **ANY** Table M1 parameter from within the Control Room for **≥ 15 minutes.**

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
System Malfunction			
Hazard affects Safety System		**MA5** 1 2 3 Hazardous event affecting a SAFETY SYSTEM required for the current operating mode. **Emergency Action Level (EAL):** **Note:** • If the only affected SAFETY SYSTEM train was already inoperable or out of service before the hazardous event occurred, then this emergency classification is not warranted. • For SAFETY SYSTEMS with multiple trains if the hazardous event only resulted in VISIBLE DAMAGE or degraded performance to the one train, then this emergency classification is not warranted. • If it is determined that the conditions of MA5 are not met then assess the event via HU3, HU4, or HU6. 1. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** 2. a. Event damage has caused indications of degraded performance or VISIBLE DAMAGE to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** b. **ANY** of the following for SAFETY SYSTEMS with multiple trains: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • An additional train of the SAFETY SYSTEM is inoperable or out of service.	

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
System Malfunction			
			MU6 1 2 3 RCS leakage for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. RCS unidentified or pressure boundary leakage in the Drywell **> 10 gpm** for **≥ 15 minutes.** **OR** 2. RCS identified leakage in the Drywell **> 25 gpm** for **≥ 15 minutes**. **OR** 3. Leakage from the RCS to a location outside the Drywell **> 25 gpm** for **≥ 15 minutes.**
Communications		**Table M3 Communications Capability** System / Onsite / Offsite / NRC Page/Party System (Gaitronics) / X / / Control Room/Portable Radio / X / / Plant Telephones (all VOIP, switched, non-switched) / X / X / X Out-of-Plant Cellular Phones / X / X / X Plant Satellite Phones / / X / X RECS / / X / Dedicated Phone Lines (ENS) / / X / X HPN and FTS 2001 / / X / X	**MU7** 1 2 3 Loss of all onsite or offsite communication capabilities. **Emergency Action Level (EAL):** 1. Loss of **ALL** Table M3 onsite communication capabilities affecting the ability to perform routine operations. **OR** 2. Loss of **ALL** Table M3 offsite communication capabilities affecting the ability to perform offsite notifications. **OR** 3. Loss of **ALL** Table M3 NRC communication capabilities affecting the ability to perform NRC notifications.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Hostile Action	**HS1** 1 2 3 4 5 D HOSTILE ACTION within the PROTECTED AREA. **Emergency Action Level (EAL):** A notification from the Security Force that a HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA.	**HA1** 1 2 3 4 5 D HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes. **Emergency Action Level (EAL):** 1. A validated notification from NRC from an aircraft attack threat **< 30 minutes** of the site. **OR** 2. Notification by the Security Force that a HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA.	**HU1** 1 2 3 4 5 D Confirmed SECURITY CONDITION or threat. **Emergency Action Level (EAL):** 1. Notification of a credible security threat directed at the site as determined per SY-AA-101-132, Security Assessment and Response to Unusual Activities. **OR** 2. A validated notification from the NRC providing information of an aircraft threat. **OR** 3. Notification by the Security Force of a SECURITY CONDITION that does **not** involve a HOSTILE ACTION.
Transfer of Plant Control **Table H1 Safety Functions** • Reactivity Control (ability to shutdown the reactor and keep it shutdown) • RPV Water Level (ability to cool the core) • RCS Heat Removal (ability to maintain a heat sink)	**HS2** 1 2 3 4 5 D Inability to control a key safety function from outside the Control Room. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. A Control Room evacuation has resulted in plant control being transferred from the Control Room to alternate locations per AOP-43, Plant Shutdown from Outside the Control Room. **AND** 2. Control of **ANY** Table H1 key safety function is **not** reestablished in **< 30 minutes**.	**HA2** 1 2 3 4 5 D Control Room evacuation resulting in transfer of plant control to alternate locations. **Emergency Action Level (EAL):** A Control Room evacuation has resulted in plant control being transferred from the Control Room to alternate locations per AOP-43, Plant Shutdown from Outside the Control Room.	

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Fire		**Table H2 Areas** • Reactor Building (when inerted the Drywell is exempt) • Control Room / Relay Room / Cable Run Rooms / Cable Spreading Room • Electric Bays • Control Room AC Equipment Room • Control Room Chiller Room • Emergency Diesel Generator Building • Battery Rooms / Battery Room Corridor • RHRSW / ESW Pump Rooms • Cable Tunnels • Remote Safe Shutdown Panels 25ASP-4 and 25ASP-5 (for MSIV / ADS)	**HU3** 1 2 3 4 5 D FIRE potentially degrading the level of safety of the plant. **Emergency Action Level (EAL):** **Note:** • The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. • Escalation of the emergency classification level would be via IC CA2 or MA5. 1. A FIRE in **ANY** Table H2 area is **not** extinguished in **< 15 minutes** of **ANY** of the following FIRE detection indications: • Report from the field (i.e., visual observation) • Receipt of multiple (more than 1) fire alarms or indications • Field verification of a single fire alarm **OR** 2. a. Receipt of a single fire alarm in **ANY** Table H2 area (i.e., no other indications of a FIRE). **AND** b. The existence of a FIRE is **not** verified in **< 30 minutes** of alarm receipt. **OR** 3. A FIRE within the plant PROTECTED AREA **not** extinguished in **< 60 minutes** of the initial report, alarm or indication. **OR** 4. A FIRE within the plant PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Earthquake			**HU4** 1 2 3 4 5 D Seismic event greater than OBE levels. **Emergency Action Level (EAL):** **Note**: • For emergency classification if EAL # 2.b is not able to be confirmed, then the occurrence of a seismic event is confirmed in manner deemed appropriate by the Emergency Director in **≤ 15 minutes** of the event. • Escalation of the emergency classification level would be via IC CA2 or MA5. 1. Seismic event **> Operating Basis Earthquake (OBE)** as determined by seismic monitoring system in accordance with AOP-14 Earthquake. **OR** 2. When Seismic Monitoring Equipment is **not** available: a. Control Room personnel feel an actual or potential seismic event. **AND** b. **ANY** one of the following confirmed in **≤ 15 minutes** of the event: • The earthquake resulted in Modified Mercalli Intensity (MMI) **≥ VI** and occurred **≤ 3.5 miles** of the plant. • The earthquake was magnitude **≥ 6.0** • The earthquake was magnitude **≥ 5.0** and occurred **≤ 125 miles** of the plant.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Toxic Gas	**Table H3** **Areas with Entry Related Mode Applicability** **Area**: • Reactor Building East Crescent • Reactor Building West Crescent • Reactor Building 272' Elevation • Reactor Building 300' Elevation • Relay Room • North Cable Room **Entry Related Mode Applicability**: Mode 3, 4, and 5	**HA5** 3 4 5 Gaseous release impeding access to equipment necessary for normal plant operations, cooldown or shutdown. **Emergency Action Level (EAL):** **Note**: If the equipment in the listed room or area was already inoperable, or out of service, before the event occurred, then no emergency classification is warranted. 1. Release of a toxic, corrosive, asphyxiant or flammable gas in **ANY** Table H3 area. **AND** 2. Entry into the room or area is prohibited or impeded.	
Hazardous Event			**HU6** 1 2 3 4 5 D Hazardous Event **Emergency Action Level (EAL):** **Note:** • EAL #4 does not apply to routine traffic impediments such as fog, snow, ice, or vehicle breakdowns or accidents. • Escalation of the emergency classification level would be via IC CA2 or MA5. 1. Tornado strike within the PROTECTED AREA. **OR** 2. Internal room or area flooding of a magnitude sufficient to require manual or automatic electrical isolation of a SAFETY SYSTEM component required by Technical Specifications for the current operating mode. **OR** 3. Movement of personnel within the PROTECTED AREA is impeded due to an offsite event involving hazardous materials (e.g., an offsite chemical spill or toxic gas release). **OR** 4. A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles. **OR** 5. Intake Water Level **> 255 feet**. **OR** 6. ESW intake bay water level **≤ 237 feet**.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Emergency Director Judgment **HG7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of a GENERAL EMERGENCY. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.	**HS7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of a SITE AREA EMERGENCY. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts, (1) toward site personnel or equipment that could lead to the likely failure of or, (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.	**HA7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT. **Emergency Action Level (EAL):** Other conditions exist which, in the judgment of the Emergency Director, indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	**HU7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT

ISFSI Malfunction

ISFSI

E-HU1 1 2 3 4 5 D

Damage to a loaded cask CONFINEMENT BOUNDARY.

Emergency Action Level (EAL):

Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading > Table E-1 values:

Table E-1 Radiation Reading

Overpack Serial Number	Overpack Average Surface Dose Rates mrem/hr (gamma+neutron)	Overpack Serial Number	Overpack Average Surface Dose Rates mrem/hr (gamma+neutron)
HI-STORM 100S S/N - 15, 16, 17	80 on the side 20 on the top 32 at the inlet and outlet vent ducts	S/N – 0186, 0187, 0188	220 on the side 40 on the top
HI-STORM 100S (232) S/N – 0169, 0170, 0171	100 on the side 20 on the top 90 at the inlet and outlet vent ducts	S/N – 0307, 0308, 0309, 0310, 0311, 0312, 0679, 0680, 0681, 0682, 0683, 0690, 0691, 0692, 0693, 0694, 0695	600 on the side 60 on the top

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D - Defueled

Abnormal Rad Levels / Radiological Effluents

Radiological Effluents

GENERAL EMERGENCY

RG1 1 2 3 4 5 D

Release of gaseous radioactivity resulting in offsite dose greater than 1,000 mRem TEDE or 5,000 mRem thyroid CDE.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.
- The pre-calculated effluent monitor values presented in EAL #1(Table R1) should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

1. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 15 minutes**.
   OR
2. Dose assessment Using actual meteorology indicates doses at or beyond the site boundary of **EITHER**:
   a. **> 1000 mRem TEDE**
   OR
   b. **> 5000 mRem CDE Thyroid**
   OR
3. Field survey results at or beyond the site boundary indicate **EITHER**:
   a. Gamma (closed window) dose rates **> 1000 mR/hr** are expected to continue for **≥ 60 minutes**.
   OR
   b. Analyses of field survey samples indicate **> 5000 mRem CDE Thyroid** for **60 minutes** of inhalation.

SITE AREA EMERGENCY

RS1 1 2 3 4 5 D

Release of gaseous radioactivity resulting in offsite dose greater than 100 mRem TEDE or 500 mRem thyroid CDE.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.
- The pre-calculated effluent monitor values presented in EAL #1(Table R1) should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

1. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 15 minutes**.
   OR
2. Dose assessment using actual meteorology indicates doses at or beyond the site boundary of **EITHER**:
   a. **> 100 mRem TEDE**
   OR
   b. **> 500 mRem CDE Thyroid**
   OR
3. Field survey results at or beyond the site boundary indicate **EITHER**:
   a. Gamma (closed window) dose rates **> 100 mR/hr** are expected to continue for **≥ 60 minutes**.
   OR
   b. Analyses of field survey samples indicate **> 500 mRem CDE Thyroid** for **60 minutes** of inhalation.

ALERT

RA1 1 2 3 4 5 D

Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem thyroid CDE.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 15 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.
- The pre-calculated effluent monitor values presented in EAL #1(Table R1) should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

1. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 15 minutes**.
   OR
2. Dose assessment using actual meteorology indicates doses at or beyond the site boundary of **EITHER**:
   a. **> 10 mRem TEDE**
   OR
   b. **> 50 mRem CDE Thyroid**
   OR
3. Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses greater than **EITHER** of the following at or beyond the site boundary
   a. **10 mRem** TEDE for **60 minutes** of exposure
   OR
   b. **50 mRem** CDE Thyroid for **60 minutes** of exposure
   OR
4. Field survey results at or beyond the site boundary indicate **EITHER**:
   a. Gamma (closed window) dose rates **> 10 mR/hr** are expected to continue for **≥ 60 minutes**.
   OR
   b. Analyses of field survey samples indicate **> 50 mRem CDE Thyroid** for **60 minutes** of inhalation.

UNUSUAL EVENT

RU1 1 2 3 4 5 D

Release of gaseous or liquid radioactivity greater than 2 times the ODCM limits for 60 minutes or longer.

Emergency Action Level (EAL):

Notes:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded 60 minutes.
- Classification based on effluent monitor readings assumes that a release path to the environment is established. If the effluent flow past an effluent monitor is known to have stopped due to actions to isolate the release path, then the effluent monitor reading is no longer valid for classification purposes.

1. Reading on the Liquid Radwaste Effluent Monitor (LWS-RE206) **> 2 times DRMS High (red)** established by a current radioactive release discharge permit for **≥ 60 minutes**.
   OR
2. Readings on **ANY** Table R1 Effluent Monitor **> Table R1 value** for **≥ 60 minutes**.
   OR
3. Confirmed sample analyses for gaseous or liquid releases indicate concentrations or release rates **> 2 times ODCM Limit** with a release duration of **≥ 60 minutes**.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

Table R1 Effluent Monitor Thresholds				
Effluent Monitor	**General Emergency**	**Site Area Emergency**	**Alert**	**Unusual Event**
Stack	7880 mR/hr	788 mR/hr	78.8 mR/hr	0.451 mR/hr (High Range Monitor)
Rx Bldg Exh	N/A	N/A	N/A	9.50E+05 cpm (Low Range Monitor)
Turb Bldg Exh	2.44 mR/hr	0.244 mR/hr	N/A	6.72E+05 cpm (Low Range Monitor)
Radw Bldg Exh	4.74 mR/hr	0.474 mR/hr	N/A	N/A
Refuel Floor Exh	N/A	N/A	N/A	9.28E+05 cpm (Low Range Monitor)

Abnormal Rad Levels / Radiological Effluents

Radiological Effluents

GENERAL EMERGENCY

RG2 1 2 3 4 5 D

Spent fuel pool level cannot be restored to at least 1.00 foot for 60 minutes or longer.

Emergency Action Levels (EAL):

Note: The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.

Spent fuel pool level cannot be restored to at least **1.00 foot** as indicated on 19LI-60A or 19LI-60B for **≥ 60 minutes**.

Table R3
Areas Requiring Continuous Occupancy

- Main Control Room – (by survey)
- Central Alarm Station – (by survey)
- Secondary Alarm Station – (by survey)

SITE AREA EMERGENCY

RS2 1 2 3 4 5 D

Spent fuel pool level at 1.00 foot.

Emergency Action Level (EAL):

Lowering of spent fuel pool level to **1.00 foot** as indicated on 19LI-60A or 19LI-60B.

Table R2 Refuel Floor Radiation Monitors

- 18RIA-051-12 Spent Fuel Pool (EPIC A-1229)
- 18RIA-051-14 New Fuel Vault (EPIC A-1231)
- 18RIA-052-30 Refuel Floor West (EPIC A-1247)
- 17RIS-456A or B Refuel Floor Exhaust

Table R4
Areas with Entry Related Mode Applicability

Area	Entry Related Mode Applicability
• Reactor Building East Crescent • Reactor Building West Crescent • Reactor Building 272’ Elevation • Reactor Building 300’ Elevation • Relay Room • North Cable Room	Mode 3, 4, and 5

ALERT

RA2 1 2 3 4 5 D

Significant lowering of water level above, or damage to, irradiated fuel.

Emergency Action Level (EAL):

1. Uncovery of irradiated fuel in the REFUELING PATHWAY.

   OR

2. Damage to irradiated fuel resulting in a release of radioactivity from the fuel as indicated by **ANY** Table R2 Radiation Monitor Alarm.

   OR

3. Lowering of spent fuel pool level to **11.00 feet** as indicated on 19LI-60A or 19LI-60B.

RA3 1 2 3 4 5 D

Radiation levels that impede access to equipment necessary for normal plant operations, cooldown or shutdown.

Emergency Action Level (EAL):

Note: If the equipment in the room or area listed in Table R4 was already inoperable, or out of service, before the event occurred, then no emergency classification is warranted.

1. Dose rate **> 15 mR/hr** in **ANY** of the areas in Table R3.

   OR

2. UNPLANNED event results in radiation levels that prohibit or significantly impede access to **ANY** of the areas in Table R4.

UNUSUAL EVENT

RU2 1 2 3 4 5 D

UNPLANNED loss of water level above irradiated fuel.

Emergency Action Level (EAL):

1. a. UNPLANNED water level drop in the REFUELING PATHWAY as indicated by **ANY** of the following:
   - Inability to restore and maintain Spent Fuel Pool water level **> low water level alarm.**

     OR

   - Indication or report of a drop in water level in the REFUELING PATHWAY.

   AND

   b. UNPLANNED Area Radiation Monitor reading rise on **ANY** Table R2 radiation monitor.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Cold Shutdown / Refueling System Malfunctions			
Loss of AC Power		**CA1** 4 5 D Loss of all offsite and onsite AC power to emergency buses for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. Loss of **ALL** offsite and onsite AC power to 4160 V emergency buses 10500 and 10600. **AND** 2. Failure to restore power to at least one 4160 V emergency bus 10500 or 10600 in **< 15 minutes** from the time of loss of both offsite and onsite AC power.	**CU1** 4 5 D Loss of all but one AC power source to emergency buses for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. AC power capability to 4160 V emergency buses 10500 and 10600 reduced to only one of the following power sources for **≥ 15 minutes.** • Reserve Station Transformer T-2 • Reserve Station Transformer T-3 • Station Service Transformer T-4 (While backfeeding from Main Transformer) • EDG A • EDG B • EDG C • EDG D **AND** 2. **ANY** additional single power source failure will result in a loss of **ALL** AC power to SAFETY SYSTEMS.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Cold Shutdown / Refueling System Malfunctions			
Safety System		**CA2** 4 5 Hazardous event affecting SAFETY SYSTEM required for the current operating mode. **Emergency Action Level (EAL):** **Note:** • If the only affected SAFETY SYSTEM train was already inoperable or out of service before the hazardous event occurred, then this emergency classification is not warranted. • For SAFETY SYSTEMS with multiple trains if the hazardous event only resulted in VISIBLE DAMAGE or degraded performance to the one train, then this emergency classification is not warranted. • If it is determined that the conditions of CA2 are not met then assess the event via HU3, HU4, or HU6. 1. The occurrence of **ANY** of the following hazardous events: • Seismic event (earthquake) • Internal or external flooding event • High winds or tornado strike • FIRE • EXPLOSION • Other events with similar hazard characteristics as determined by the Shift Manager **AND** 2. a. Event damage has caused indications of degraded performance or VISIBLE DAMAGE to one train of a SAFETY SYSTEM required by Technical Specifications for the current operating mode. **AND** b. **ANY** of the following for SAFETY SYSTEMS with multiple trains: • Event damage has caused indications of degraded performance to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • Event damage has resulted in VISIBLE DAMAGE to a second train of the SAFETY SYSTEM required by Technical Specifications for the current operating mode. **OR** • An additional train of the SAFETY SYSTEM is inoperable or out of service.	

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

Cold Shutdown / Refueling System Malfunctions

DC Power

ALERT

CU3 4 5

Loss of Vital DC power for 15 minutes or longer.

Emergency Action Level (EAL):

Note: The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.

Voltage is **< 105 VDC** on required Vital DC buses 71BCB-2A and 71BCB-2B for **≥ 15 minutes**.

Communications

ALERT

Table C1 Communication Capabilities

System	Onsite	Offsite	NRC
Page/Party System (Gaitronics)	X		
Control Room/Portable Radio	X		
Plant Telephones (all VOIP, switched, non-switched)	X	X	X
Out-of-Plant Cellular Phones	X	X	X
Plant Satellite Phones		X	X
RECS		X	
Dedicated Phone Lines (ENS)		X	X
HPN and FTS 2001		X	X

UNUSUAL EVENT

CU4 4 5 D

Loss of all onsite or offsite communication capabilities.

Emergency Action Level (EAL):

1. Loss of **ALL** Table C1 onsite communication capabilities affecting the ability to perform routine operations.

   OR

2. Loss of **ALL** Table C1 offsite communication capabilities affecting the ability to perform offsite notifications.

   OR

3. Loss of **ALL** Table C1 NRC communication capabilities affecting the ability to perform NRC notifications.

Heat Sink

Table C2 RCS Heat-up Duration Thresholds

RCS Status	Containment Closure Status	Heat-up Duration
Intact	Not Applicable	60 minutes*
Not Intact	Established	20 minutes*
	Not Established	0 minutes

* If an RCS heat removal system is in operation within this time frame and RCS temperature is being reduced, then EAL #1 is **not** applicable.

ALERT

CA5 4 5

Inability to maintain plant in cold shutdown.

Emergency Action Levels (EAL):

Note:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- A momentary UNPLANNED excursion above the Technical Specification cold shutdown temperature limit when heat removal function is available does not warrant classification.

1. UNPLANNED rise in RCS temperature **> 212 ºF** for **> Table C2 duration**.

   OR

2. UNPLANNED RPV pressure rise **> 10 psig** as a result of temperature rise

UNUSUAL EVENT

CU5 4 5

UNPLANNED rise in RCS temperature.

Emergency Action Levels (EAL):

Note:

- The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded.
- A momentary UNPLANNED excursion above the Technical Specification cold shutdown temperature limit when heat removal function is available does not warrant classification.

1. UNPLANNED rise in RCS temperature **> 212 ºF.**

   OR

2. Loss of the following for **≥ 15 minutes.**
   - **ALL** RCS temperature indications

     AND
   - **ALL** RPV water level indications

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Cold Shutdown / Refueling System Malfunctions			
RCS Leakage / Inventory **CG6** 4 5 Loss of RPV inventory affecting fuel clad integrity with containment challenged. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1 a. RPV water level **< 0 inches (TAF)** for **≥ 30 minutes.** **AND** b. **Any** Table C4 Containment Challenge Indication. **OR** 2. a. RPV water level **cannot** be monitored for **≥ 30 minutes.** **AND** b. Core uncovery is indicated by **ANY** of the following: • Table C3 indication of a sufficient magnitude to indicate core uncovery. **OR** • 18RIA-052-30 Refuel Floor West (EPIC A-1247) Rad monitor **≥ 3 R/hr.** **AND** c. **ANY** Table C4 Containment Challenge Indication.	**CS6** 4 5 Loss of RPV inventory affecting core decay heat removal capabilities. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. With CONTAINMENT CLOSURE **not** established, RPV water level **< 120.5 inches.** **OR** 2. With CONTAINMENT CLOSURE established, RPV water level **< 0 inches (TAF).** **OR** 3. a. RPV water level **cannot** be monitored for **≥ 30 minutes.** **AND** b. Core uncovery is indicated by **ANY** of the following: • Table C3 indication of a sufficient magnitude to indicate core uncovery. **OR** • 18RIA-052-30 Refuel Floor West (EPIC A-1247) Rad monitor **≥ 3 R/hr.**	**CA6** 4 5 Loss of RPV inventory. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. Loss of RPV inventory as indicated by level **< 126.5 inches.** **OR** 2. a. RPV water level **cannot** be monitored for **≥ 15 minutes**. **AND** b. Loss of RPV inventory per Table C3 indications.	**CU6** 4 5 UNPLANNED loss of RP inventory for 15 minutes or longer. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. UNPLANNED loss of reactor coolant results in the inability to restore and maintain RPV level to above the **procedurally established lower limit** for **≥ 15 minutes**. **OR** 2. a. RPV water level **cannot** be monitored. **AND** b. Loss of RPV inventory per Table C3 indications.
	Table C3 Indications of RCS Leakage • UNPLANNED Drywell equipment drain sump level rise* • UNPLANNED Drywell floor drain sump level rise* • UNPLANNED Reactor Building equipment sump level rise* • UNPLANNED Reactor Building floor drain sump level rise* • UNPLANNED Torus level rise* • UNPLANNED RPV make up rate rise* • Observation of leakage or inventory loss *Rise in level is attributed to a loss of RPV inventory	**Table C4 Containment Challenge Indications** • Primary Containment Hydrogen Concentration **≥ 6%** and Oxygen **≥ 5%** • UNPLANNED rise in containment pressure • CONTAINMENT CLOSURE **not** established* • Secondary Containment area radiation > **ANY** Maximum Safe Operating Limit (EOP-5) * if CONTAINMENT CLOSURE is re-established prior to exceeding the 30-minute core uncovery time limit, then escalation to a General Emergency is **not** required.	

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Hostile Action	**HS1** 1 2 3 4 5 D HOSTILE ACTION within the PROTECTED AREA. **Emergency Action Level (EAL):** A notification from the Security Force that a HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA.	**HA1** 1 2 3 4 5 D HOSTILE ACTION within the OWNER CONTROLLED AREA or airborne attack threat within 30 minutes. **Emergency Action Level (EAL):** 1. A validated notification from NRC of an aircraft attack threat **< 30 minutes** from the site. **OR** 2. Notification by the Security Force that a HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA.	**HU1** 1 2 3 4 5 D Confirmed SECURITY CONDITION or threat. **Emergency Action Level (EAL):** 1. Notification of a credible security threat directed at the site as determined per SY-AA-101-132, Security Assessment and Response to Unusual Activities. **OR** 2. A validated notification from the NRC providing information of an aircraft threat. **OR** 3. Notification by the Security Force of a SECURITY CONDITION that does **not** involve a HOSTILE ACTION.
Transfer of Plant Control **Table H1 Safety Functions** • Reactivity Control (ability to shutdown the reactor and keep it shutdown) • RPV Water Level (ability to cool the core) • RCS Heat Removal (ability to maintain a heat sink)	**HS2** 1 2 3 4 5 D Inability to control a key safety function from outside the Control Room. **Emergency Action Level (EAL):** **Note:** The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. 1. A Control Room evacuation has resulted in plant control being transferred from the Control Room to alternate locations per AOP-43, Plant Shutdown from Outside the Control Room. **AND** 2. Control of **ANY** Table H1 key safety function is **not** reestablished in **< 30 minutes**.	**HA2** 1 2 3 4 5 D Control Room evacuation resulting in transfer of plant control to alternate locations. **Emergency Action Level (EAL):** A Control Room evacuation has resulted in plant control being transferred from the Control Room to alternate locations per AOP-43, Plant Shutdown from Outside the Control Room.	

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Fire		**Table H2 Areas** • Reactor Building (when inerted the Drywell is exempt) • Control Room / Relay Room / Cable Run Rooms / Cable Spreading Room • Electric Bays • Control Room AC Equipment Room • Control Room Chiller Room • Emergency Diesel Generator Building • Battery Rooms / Battery Room Corridor • RHRSW / ESW Pump Rooms • Cable Tunnels • Remote Safe Shutdown Panels 25ASP-4 and 25ASP-5 (for MSIV / ADS)	**HU3** 1 2 3 4 5 D FIRE potentially degrading the level of safety of the plant. **Emergency Action Level (EAL):** **Note:** • The Emergency Director should declare the event promptly upon determining that the applicable time has been exceeded, or will likely be exceeded. • Escalation of the emergency classification level would be via IC CA2 or MA5 1. A FIRE in **ANY** Table H2 area is **not** extinguished in **< 15 minutes** of **ANY** of the following FIRE detection indications: • Report from the field (i.e., visual observation) • Receipt of multiple (more than 1) fire alarms or indications • Field verification of a single fire alarm **OR** 2. a. Receipt of a single fire alarm in **ANY** Table H2 area (i.e., no other indications of a FIRE). **AND** b. The existence of a FIRE is **not** verified in **< 30 minutes** of alarm receipt. **OR** 3. A FIRE within the plant PROTECTED AREA **not** extinguished in **< 60 minutes** of the initial report, alarm or indication. **OR** 4. A FIRE within the plant PROTECTED AREA that requires firefighting support by an offsite fire response agency to extinguish.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Earthquake			**HU4** 1 2 3 4 5 D Seismic event greater than OBE levels. **Emergency Action Level (EAL):** **Note**: • For emergency classification if EAL # 2.b is not able to be confirmed, then the occurrence of a seismic event is confirmed in manner deemed appropriate by the Emergency Director in **≤ 15 minutes** of the event • Escalation of the emergency classification level would be via IC CA2 or MA5. 1. Seismic event **> Operating Basis Earthquake (OBE)** as determined by seismic monitoring system in accordance with AOP-14 Earthquake. **OR** 2. When Seismic Monitoring Equipment is **not** available: a. Control Room personnel feel an actual or potential seismic event. **AND** b. **ANY** one of the following confirmed in **≤ 15 minutes** of the event: • The earthquake resulted in Modified Mercalli Intensity (MMI) **≥ VI** and occurred **≤ 3.5 miles** of the plant. • The earthquake was magnitude **≥ 6.0** • The earthquake was magnitude **≥ 5.0** and occurred **≤ 125** miles of the plant.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D - Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Toxic Gas	**Table H3** **Areas with Entry Related Mode Applicability** **Area**: • Reactor Building East Crescent • Reactor Building West Crescent • Reactor Building 272' Elevation • Reactor Building 300' Elevation • Relay Room • North Cable Room **Entry Related Mode Applicability**: Mode 3, 4, and 5	**HA5** 3 4 5 Gaseous release impeding access to equipment necessary for normal plant operations, cooldown or shutdown. **Emergency Action Level (EAL):** **Note**: If the equipment in the listed room or area was already inoperable, or out of service, before the event occurred, then no emergency classification is warranted. 1. Release of a toxic, corrosive, asphyxiant or flammable gas in **ANY** Table H3 area. **AND** 2. Entry into the room or area is prohibited or impeded	
Hazardous Event			**HU6** 1 2 3 4 5 D Hazardous Event **Emergency Action Level (EAL):** **Note:** • EAL #4 does not apply to routine traffic impediments such as fog, snow, ice, or vehicle breakdowns or accidents. • Escalation of the emergency classification level would be via IC CA2 or MA5 1. Tornado strike within the PROTECTED AREA. **OR** 2. Internal room or area flooding of a magnitude sufficient to require manual or automatic electrical isolation of a SAFETY SYSTEM component required by Technical Specifications for the current operating mode. **OR** 3. Movement of personnel within the PROTECTED AREA is impeded due to an offsite event involving hazardous materials (e.g., an offsite chemical spill or toxic gas release). **OR** 4. A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles. **OR** 5. Intake Water Level **> 255 feet**. **OR** 6. ESW intake bay water level **≤ 237 feet**.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
Hazards and Other conditions Affecting Plant Safety			
Emergency Director Judgment **HG7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of a GENERAL EMERGENCY. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or IMMINENT substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.	**HS7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of a SITE AREA EMERGENCY. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which involve actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts, (1) toward site personnel or equipment that could lead to the likely failure of or, (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.	**HA7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of an ALERT. **Emergency Action Level (EAL):** Other conditions exist which, in the judgment of the Emergency Director, indicate that events are in progress or have occurred which involve an actual or potential substantial degradation of the level of safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels.	**HU7** 1 2 3 4 5 D Other conditions exist which in the judgment of the Emergency Director warrant declaration of an UNUSUAL EVENT. **Emergency Action Level (EAL):** Other conditions exist which in the judgment of the Emergency Director indicate that events are in progress or have occurred which indicate a potential degradation of the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D – Defueled

GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	UNUSUAL EVENT
ISFSI Malfunction			
ISFSI			**E-HU1** 1 2 3 4 5 D Damage to a loaded cask CONFINEMENT BOUNDARY. **Emergency Action Level (EAL):** Damage to a loaded cask CONFINEMENT BOUNDARY as indicated by a radiation reading > Table E-1 values:

Table E-1 Radiation Reading

Overpack Serial Number	Overpack Average Surface Dose Rates mrem/hr (gamma+neutron)	Overpack Serial Number HI-STORM 100S (XXX)	Overpack Average Surface Dose Rates mrem/hr (gamma+neutron)
HI-STORM 100S S/N - 15, 16, 17	80 on the side 20 on the top 32 at the inlet and outlet vent ducts	S/N – 0186, 0187, 0188	220 on the side 40 on the top
		S/N – 0307, 0308, 0309, 0310, 0311, 0312, 0679, 0680, 0681, 0682, 0683, 0690, 0691, 0692, 0693, 0694, 0695	600 on the side 60 on the top
HI-STORM 100S (232) S/N – 0169, 0170, 0171	100 on the side 20 on the top 90 at the inlet and outlet vent ducts		

Modes: 1 – Power Operation 2 – Startup 3 – Hot Shutdown 4 – Cold Shutdown 5 – Refueling D - Defueled