LR-N17-0002

Attachment 11

SGS - EAL Wall Charts

(2 pages)

EAL WALL CHART - HOT CONDITIONS (RCS > 200°F)

		GENERAL EMERGENCY Implement Att. 4	SITE AREA EMERGENCY Implement Att. 3	ALERT Implement Att. 2	UNUSUAL EVENT Implement Att. 1 (Att. 24 for Common Site)
R Abnormal Rad Levels / Rad Effluent	**1** Offsite Rad Conditions	Release of gaseous radioactivity resulting in offsite dose greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE **RG1.1** 1 2 3 4 5 6 DEF In the absence of dose assessment results, reading on **ANY** Table R-1 effluent radiation monitor **> column "GE"** for **≥ 15 min.** (Notes 1, 2, 3, 4) **RG1.2** 1 2 3 4 5 6 DEF Dose assessment using actual meteorology indicates doses **> 1,000 mrem TEDE** or **5,000 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** (Note 4) **RG1.3** 1 2 3 4 5 6 DEF Field survey results indicate **EITHER** of the following at or beyond the **PROTECTED AREA** boundary: • Closed window dose rates **> 1,000 mR/hr** expected to continue for **≥ 60 min.** • Analyses of field survey samples indicate I-131 concentration **> 3.85E-06 µCi/cc** (Notes 1, 2)	Release of gaseous radioactivity resulting in offsite dose greater than 100 mrem TEDE or 500 mrem thyroid CDE **RS1.1** 1 2 3 4 5 6 DEF In the absence of dose assessment results, reading on **ANY** Table R-1 effluent radiation monitor **> column "SAE"** for **≥ 15 min.** (Notes 1, 2, 3, 4) **RS1.2** 1 2 3 4 5 6 DEF Dose assessment using actual meteorology indicates doses **> 100 mrem TEDE** or **500 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** (Note 4) **RS1.3** 1 2 3 4 5 6 DEF Field survey results indicate **EITHER** of the following at or beyond the **PROTECTED AREA** boundary: • Closed window dose rates **> 100 mR/hr** expected to continue for **≥ 60 min.** • Analyses of field survey samples indicate I-131 concentration **> 3.85E-07 µCi/cc** (Notes 1, 2)	Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem thyroid CDE **RA1.1** 1 2 3 4 5 6 DEF In the absence of dose assessment results, reading on **ANY** Table R-1 effluent radiation monitor **> column "ALERT"** for **≥ 15 min.** (Notes 1, 2, 3, 4) **RA1.2** 1 2 3 4 5 6 DEF Dose assessment using actual meteorology indicates doses **> 10 mrem TEDE** or **50 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** (Note 4) **RA1.3** 1 2 3 4 5 6 DEF Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses **> 10 mrem TEDE** or **50 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** for **60 min. of exposure** (Notes 1, 2) **RA1.4** 1 2 3 4 5 6 DEF Field survey results indicate **EITHER** of the following at or beyond the **PROTECTED AREA** boundary (Notes 1, 2): • Closed window dose rates **> 10 mR/hr** expected to continue **≥ 60 min.** • Analyses of field survey samples indicate I-131 concentration **> 3.85E-08 µCi/cc**	Release of gaseous or liquid radioactivity greater than 2 times the ODCM limits for 60 minutes or longer **RU1.1** 1 2 3 4 5 6 DEF Reading on **ANY** Table R-1 effluent radiation monitor **> column "UE"** for **≥ 60 min.** (Notes 1, 2, 3) **RU1.2** 1 2 3 4 5 6 DEF Sample analysis for a gaseous or liquid release indicates a concentration or release rate > Table R-2 threshold for **≥ 60 min.** (Notes 1, 2)
	2 Irradiated Fuel Events	Spent fuel pool level at the top of the fuel racks **RG2.1** 1 2 3 4 5 6 DEF Spent fuel pool level **CANNOT** be restored to at least **105.5 ft.** for **≥ 60 min.** (Note 1)	Spent fuel pool level at the top of the fuel racks **RS2.1** 1 2 3 4 5 6 DEF Lowering of spent fuel pool level to **105.5 ft.**	Significant lowering of water level above, or damage to, irradiated fuel **RA2.1** 1 2 3 4 5 6 DEF Uncovery of irradiated fuel in the **REFUELING PATHWAY** **RA2.2** 1 2 3 4 5 6 DEF Damage to irradiated fuel resulting in a release of radioactivity that causes a High alarm on **ANY** of the following radiation monitors: Fuel Handling Bldg • 1(2)R5 Fuel Handling Bldg • 1(2)R9 Fuel Storage Area • 1(2)R32A Fuel Handling Crane Fuel Handling Bldg (local monitor) • 1(2)R41A Plant Vent Containment • 1(2)R2 Containment General Area 130 ft elevation • 1(2)R11A Containment Air - Particulate • 1(2)R12A Containment Vent - Noble Gas • 1(2)R12B Containment Vent - Iodine **RA2.3** 1 2 3 4 5 6 DEF Lowering of spent fuel pool level to **115 ft.**	**UNPLANNED** loss of water level above irradiated fuel **RU2.1** 1 2 3 4 5 6 DEF **UNPLANNED** water level drop in the **REFUELING PATHWAY** as indicated by **ANY** of the following: • Confirmed SFP low level alarm (OHA-C35 SFP LVL LO) • RVLIS - Refueling Mode • Visual observation (local or remote) **AND** **VALID** area radiation monitor reading rise on **ANY** of the following: • 1(2)R5 Fuel Handling Bldg • 1(2)R9 Fuel Storage Area • 1(2)R32A Fuel Handling Crane Fuel Handling Bldg (local monitor) • 1(2)R2 Containment General Area 130 ft elevation • Temporary ARMs on 130 ft elevation of the Containment or Fuel Handling Building
	3 Area Radiation Levels	None	None	Radiation levels that **IMPEDE** access to equipment necessary for normal plant operations, cooldown or shutdown **RA3.1** 1 2 3 4 5 6 DEF Dose rates **> 15 mR/hr** in **EITHER** of the following: • Control Room (1(2)R1A or by survey) • Central Alarm Station (by survey) **RA3.2** An **UNPLANNED** event results in radiation levels that prohibit or **IMPEDE** access to **ANY** Table R-3 rooms or areas (Note 5)	
	4 Spent Fuel Transit & Storage	None	None	None	Damage to a loaded cask **CONFINEMENT BOUNDARY** **RU4.1** 1 2 3 4 5 6 DEF Damage to a Multi Purpose Canister (MPC) **CONFINEMENT BOUNDARY** as indicated by on-contact radiation readings ≥ **EITHER** of the following: • **600 mR/hr (gamma + neutron)** on the surface of the spent fuel cask, excluding the air vents • **60 mR/hr (gamma + neutron)** on the top of the spent fuel cask
H Hazards	**1** Security	None	**HOSTILE ACTION** within the **PROTECTED AREA** **HS1.1** 1 2 3 4 5 6 DEF A **HOSTILE ACTION** is occurring or has occurred within the **PROTECTED AREA** as reported by the Security Shift Manager or designee (Note 6)	**HOSTILE ACTION** within the **OWNER CONTROLLED AREA** or airborne attack threat within 30 minutes **HA1.1** 1 2 3 4 5 6 DEF A **HOSTILE ACTION** is occurring or has occurred within the **OCA** as reported by the Security Shift Manager or designee (Note 6) **OR** A **VALIDATED** notification from NRC of an aircraft attack threat within **30 min.** of the site (Note 6)	Confirmed **SECURITY CONDITION** or threat **HU1.1** 1 2 3 4 5 6 DEF (Common Site) A **SECURITY CONDITION** that does **NOT** involve a **HOSTILE ACTION** as reported by the Security Shift Manager or designee (Note 6) **OR** Notification of a credible security threat directed at the site – (determined by security in accordance with SY-AA-101-132, "Threat Assessment") (Note 6) **OR** A **VALIDATED** notification from the NRC providing information of an aircraft threat (Note 6)
	2 Seismic Event		[Refer to CA6.1 or SA9.1 for potential escalation due to a seismic event] None	Seismic event greater than OBE levels **HU2.1** 1 2 3 4 5 6 DEF (Common Site) Control room personnel feel an actual or potential seismic event **AND** The occurrence of a seismic event is confirmed in a manner deemed appropriate by the Shift Manager or Emergency Coordinator
	3 Natural or Tech. Hazard		[Refer to CA6.1 or SA9.1 for potential escalation due to a hazardous event] None	Hazardous event **HU3.1** 1 2 3 4 5 6 DEF (Common Site) A tornado strike within the **PROTECTED AREA** **HU3.2** 1 2 3 4 5 6 DEF Internal room or area **FLOODING** of a magnitude sufficient to require manual or automatic electrical isolation of a **SAFETY SYSTEM** component needed for the current operating mode **HU3.3** 1 2 3 4 5 6 DEF 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) **HU3.4** 1 2 3 4 5 6 DEF (Common Site) A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles (Note 7)
	4 Fire		[Refer to CA6.1 or SA9.1 for potential escalation due to fire] None	**FIRE** potentially degrading the level of safety of the plant **HU4.1** 1 2 3 4 5 6 DEF A **FIRE** is **NOT** extinguished within **15 min.** of **ANY** of the following fire detection indications (Note 1): • 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 **AND** **FIRE** is located in **ANY** Table H-1 area **HU4.2** 1 2 3 4 5 6 DEF Receipt of a single fire alarm (i.e., **NO** other indications of a **FIRE**) **AND** The fire alarm is indicating a **FIRE** within **ANY** Table H-1 area **AND** The existence of a **FIRE** is **NOT** verified within **30 min.** of alarm receipt (Note 1) **HU4.3** 1 2 3 4 5 6 DEF (Common Site) A **FIRE** within the plant **PROTECTED AREA NOT** extinguished within **60 min.** of the initial report, alarm or indication (Note 1) **HU4.4** 1 2 3 4 5 6 DEF (Common Site) A **FIRE** within the plant **PROTECTED AREA** that requires firefighting support by an offsite fire response agency to extinguish
	5 Hazardous Gases	None		Gaseous release **IMPEDING** access to equipment necessary for normal plant operations, cooldown or shutdown **HA5.1** A Release of a toxic, corrosive, asphyxiant or flammable gas into **ANY** Table H-2 rooms or areas **AND** Entry into the room or area is prohibited or **IMPEDED** (Note 5)	None
	6 Control Room Evacuation	None	Inability to control a key safety function from outside the Control Room **HS6.1** 1 2 3 4 5 6 An event has resulted in plant control being transferred from the Control Room to the Remote Shutdown Panel (RSP) **AND** Control of **ANY** of the following key safety functions is **NOT** reestablished within **15 min.** (Note 1): • Reactivity (modes 1, 2 and 3 **only**) • RPV inventory • RCS heat removal	Control Room evacuation resulting in transfer of plant control to alternate locations **HA6.1** 1 2 3 4 5 6 DEF An event has resulted in plant control being transferred from the Control Room to the Remote Shutdown Panel (RSP)	None
	7 EC Judgment	Other conditions exist which in the judgment of the Emergency Coordinator warrant declaration of a **GENERAL EMERGENCY** **HG7.1** 1 2 3 4 5 6 D Other conditions exist which in the judgment of the Emergency Coordinator 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.	Other conditions existing that in the judgment of the Emergency Coordinator warrant declaration of a **SITE AREA EMERGENCY** **HS7.1** 1 2 3 4 5 6 D Other conditions exist which in the judgment of the Emergency Coordinator 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.	Other conditions exist that in the judgment of the Emergency Coordinator warrant declaration of an **ALERT** **HA7.1** 1 2 3 4 5 6 D Other conditions exist which, in the judgment of the Emergency Coordinator, 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.	Other conditions existing that in the judgment of the Emergency Coordinator warrant declaration of an **UNUSUAL EVENT** **HU7.1** 1 2 3 4 5 6 D Other conditions exist which, in the judgment of the Emergency Coordinator, 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.

Table R-1 Effluent Monitor Classification Thresholds *

	Release Point	Monitor	GE	SAE	Alert	UE
Gaseous	Plant Vent Effluent Noble Gas Unit 1 + Unit 2	1R41D + 2R41D **OR** SPDS combined release rate	8.48E+09 µCi/sec	8.48E+08 µCi/sec	4.84E+07 µCi/sec	4.84E+05 µCi/sec
Liquid	Containment Fan Coil Process	1(2)R13A/B	------	------	------	1.64E+03 cpm
Liquid	Liquid Radwaste Disposal Process	1R18 2R18	------	------	------	U1= 5.50E+05 cpm U2= 9.90E+05 cpm
Liquid	Steam Generator Blowdown Process	1R19A-D 2R19A-D	------	------	------	U1= 6.40E+03 cpm U2= 8.30E+03 cpm
Liquid	Non-Rad Liquid Waste	2R37	------	------	------	3.60E+03 cpm

Table R-2 Effluent Sample Classification Thresholds

	Release Point	Sample	Threshold
Gaseous	Plant Vent	NG	6.40E-03 µCi/cc
		I-131	5.60E-07 µCi/cc
	Unmonitored	Isotopic	2 x ODCM 3/4.11.2
Liquid	Containment Fan Coil	Isotopic	2 x ODCM 3/4.11.1
Liquid	Liquid Radwaste Disposal	Isotopic	2 x ODCM 3/4.11.1
Liquid	Steam Generator Blowdown	Isotopic	2 x ODCM 3/4.11.1
Liquid	Chemical Waste Basin	Isotopic	2 x ODCM 3/4.11.1
Liquid	Unmonitored	Isotopic	2 x ODCM 3/4.11.1

Table R-3 Safe Operation & Shutdown Rooms/Areas

Unit 1/2 Room/Area	Mode Applicability
78' Electrical Penetration Area	4
64' Switchgear Room	4
SI Pump Room	3, 4
45' RHR Pump Rooms	3, 4

Table H-1 Fire Areas

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

Table H-2 Safe Operation & Shutdown Rooms/Areas

Unit 1/2 Room/Area	Mode Applicability
78' Electrical Penetration Area	4
64' Switchgear Room	4
SI Pump Rooms	3, 4
45' RHR Pump Rooms	3, 4

NOTES

Note 1: The Emergency Coordinator should declare the event promptly upon determining that time limit has been exceeded, or will likely be exceeded.

Note 2: If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded the specified time limit.

Note 3: If the effluent flow past an effluent monitor is known to have stopped, indicating that the release path is isolated, the effluent monitor reading is **NO** longer **VALID** for classification purposes.

Note 4: The pre-calculated effluent monitor values presented in EALs RA1.1, RS1.1 and RG1.1 should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

Note 5: 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.

Note 6: Shift Manager (SM) should implement the Prompt Actions of the Security Emergency Guideline Attachment located in NC.EP-EP.ZZ-0102, EC Response, prior to classification of a security emergency.

Key Information to obtain from Security Supervision upon SM notification of a security event:

- Determination if the security event is a **HOSTILE ACTION** or **SECURITY CONDITION**
- If a **HOSTILE ACTION**, is location the **OCA** or **PA**?

Note 7: This EAL does **NOT** apply to routine traffic impediments such as fog, snow, ice, or vehicle breakdowns or accidents.

Note 8: A manual scram action is **ANY** operator action, or set of actions, which causes the control rods to be rapidly inserted into the core, and does **NOT** include manually driving in control rods or implementation of boron injection strategies.

Note 9: If **CONTAINMENT CLOSURE** is re-established prior to exceeding the 30-minute time limit, declaration of a **GENERAL EMERGENCY** is **NOT** required.

Note 10: One full train of depressurization equipment consists of **EITHER**:

- at least 5 CFCUs running in low speed with **NO** Containment Spray train in service
- at least 3 CFCUs running in low speed with one Containment Spray train in service

Note 11: Refer to the Fission Product Barrier Table for possible event escalation due to RCS leakage or high RCS activity.

		GENERAL EMERGENCY Implement Att. 4	SITE AREA EMERGENCY Implement Att. 3	ALERT Implement Att. 2	UNUSUAL EVENT Implement Att. 1 (Att. 24 for Common Site)
S System Malfunct.	**1** Loss of AC Power	Prolonged loss of **ALL** offsite and **ALL** onsite AC power to vital buses **SG1.1** 1 2 3 4 Loss of **ALL** offsite and **ALL** onsite AC power to 4 KV vital buses **AND** **EITHER** of the following: • Restoration of at least one vital bus in **< 4 hrs** is **NOT** likely (Note 1) • CFST Core Cooling **RED** path conditions met	Loss of **ALL** offsite power and **ALL** onsite AC power to vital buses for 15 minutes or longer **SS1.1** 1 2 3 4 Loss of **ALL** offsite and **ALL** onsite AC power to 4 KV vital buses for **≥ 15 min.** (Note 1)	Loss of **ALL but one** AC power source to vital buses for 15 minutes or longer **SA1.1** 1 2 3 4 AC power capability to 4 KV vital buses reduced to a single power source for **≥ 15 min.** (Note 1) **AND** **ANY** additional single power source failure will result in loss of **ALL** AC power to **SAFETY SYSTEMS**	Loss of **ALL** offsite AC power capability to vital buses for 15 minutes or longer **SU1.1** 1 2 3 4 Loss of **ALL** offsite AC power to 4 KV vital buses for **≥ 15 min.** (Note 1)
	2 Loss of DC Power	Loss of **ALL** vital AC and vital DC power sources for 15 minutes or longer **SG2.1** 1 2 3 4 Loss of **ALL** offsite and **ALL** onsite AC power to 4 KV vital buses for **≥ 15 min.** **AND EITHER:** • **< 114 VDC** bus voltage indications on **ALL** 125 VDC vital buses for **≥ 15 min.** • **< 25 VDC** bus voltage indications on **both** 28 VDC vital buses for **≥ 15 min.** (Note 1)	Loss of **ALL** vital DC power for 15 minutes or longer **SS2.1** 1 2 3 4 **< 114 VDC** bus voltage indications on **ALL** 125 VDC vital buses for **≥ 15 min.** **OR** **< 25 VDC** bus voltage indications on **both** 28 VDC vital buses for **≥ 15 min.** (Note 1)	None	None
	3 Loss of CR Indications	None	**Table S-2 Significant Transients** • Automatic turbine runback > 25% thermal reactor power • Electrical load rejection > 25% full electrical load • Reactor Trip • Safety Injection Activation	**UNPLANNED** loss of Control Room indications for 15 minutes or longer with a significant transient in progress **SA3.1** 1 2 3 4 An **UNPLANNED** event results in the inability to monitor one or more Table S-1 parameters from within the Control Room for **≥ 15 min.** (Note 1) **AND** **ANY** significant transient is in progress, Table S-2	**UNPLANNED** loss of Control Room indications for 15 minutes or longer **SU3.1** 1 2 3 4 An **UNPLANNED** event results in the inability to monitor one or more Table S-1 parameters from within the Control Room for **≥ 15 min.** (Note 1)
	4 RCS Activity	None	None	**Table S-1 Safety System Parameters** • Reactor power • RCS level • RCS pressure • CET temperature • Level in at least one SG • Auxiliary or emergency feedwater flow to at least on SG	Reactor coolant activity greater than Technical Specification allowable limits **SU4.1** 1 2 3 4 Letdown Line Monitor readings indicating fuel clad degradation based on receipt of **EITHER** of the following (Note 11): • 1R31A in warning • 2R31 in alarm **SU4.2** 1 2 3 4 Reactor coolant activity (Dose Equivalent Iodine) exceeds limits of Technical Specification Figure 3.4-1 (Note 11)
	5 RCS Leakage	None	None	None	RCS leakage for 15 minutes or longer **SU5.1** 1 2 3 4 RCS unidentified or **PRESSURE BOUNDARY LEAKAGE > 10 gpm** for **≥ 15 min.** **OR** RCS identified leakage **> 25 gpm** for **≥ 15 min.** **OR** Leakage from the RCS to a location outside containment **> 25 gpm** for **≥ 15 min.** (Notes 1, 11)
	6 RPS Failure	None	Inability to shutdown the reactor causing a challenge to RCS water level or RCS heat removal **SS6.1** 1 2 An automatic or manual trip did **NOT** shut down the reactor as indicated by reactor power **≥ 5%** **AND** **ALL** actions to shut down the reactor are **NOT** successful as indicated by reactor power **≥ 5%** **AND EITHER:** • CFST Core Cooling **RED** path conditions met • CFST Heat Sink **RED** path exists due to actual loss of secondary heat sink and heat sink is required	Automatic or manual trip fails to shut down the reactor and subsequent manual actions taken at the reactor control consoles are **NOT** successful in shutting down the reactor **SA6.1** 1 2 An automatic or manual trip did **NOT** shut down the reactor as indicated by reactor power **≥ 5%** **AND** Manual trip actions taken at the reactor control console (reactor trip switches, trip bkr bezels, supply breakers 1/2E6D and 1/2G6D) are **NOT** successful in shutting down the reactor as indicated by reactor power **≥ 5%** (Note 8)	Automatic or manual trip fails to shut down the reactor **SU6.1** 1 2 An automatic or manual trip did **NOT** shut down the reactor after **ANY** RPS setpoint is exceeded or a manual trip action was initiated **AND** A subsequent automatic trip or manual trip action taken at the reactor control console (reactor trip switches, trip bkr bezels, supply breakers 1/2E6D and 1/2G6D) is successful in shutting down the reactor as indicated by reactor power **< 5%** (Note 8)
	7 Loss of Commun.	None	None	**Table S-3 Communications Methods** System / Onsite / Offsite / NRC Direct Inward Dial System (DID): X / X / X Station Page System (Gaitronics): X Station Radio System: X Nuclear Emergency Telephone System (NETS): X / X Centrex Phone System (ESSX): X / X NRC (ENS): X	Loss of **ALL** onsite or offsite communications capabilities **SU7.1** 1 2 3 4 Loss of **ALL** Table S-3 onsite communication methods **OR** Loss of **ALL** Table S-3 offsite communication methods **OR** Loss of **ALL** Table S-3 NRC communication methods
	8 CMT Failure	None	None **Table S-4 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	None	Loss of **ALL** onsite or offsite communications capabilities **SU8.1** 1 2 3 4 **ANY** penetration is not isolated within 1**5 min.** of a **VALID** containment isolation signal **OR** Containment pressure **> 15 psig** with **< one full train of containment depressurization equipment** operating per design for **≥ 15 min.** (Note 10) (Note 1)
	9 Hazardous Event Affecting Safety Systems	None		Hazardous event affecting a **SAFETY SYSTEM** needed for the current operating mode **SA9.1** 1 2 3 4 The occurrence of **ANY** Table S-4 hazardous event **AND EITHER:** • Event damage has caused indications of degraded performance in at least one train of a **SAFETY SYSTEM** needed for the current operating mode • The event has caused **VISIBLE DAMAGE** to a **SAFETY SYSTEM** component or structure needed for the current operating mode	None

Use of Fission Product Barrier Table

MODEs 1 2 3 4

A point system is used to determine the Emergency Classification Level based on the Fission Product Barrier Table. Each Fission Product Barrier Loss and Potential Loss threshold is assigned a point value as noted below.

Perform the following:

1. Review all columns of the Fission Product Barrier Table and identify which need further review.
2. For each of the three barriers, determine the EAL with the highest point value. No more than one EAL should be selected for each barrier.
3. Add the point values for the three barriers.
4. Classify based on the point value sum as follows:

If sum is:	Classify as:	Emergency Action Levels (EALs)	Refer to ECG ATT#
4, 5	ALERT	**ANY** loss or **ANY** potential loss of either Fuel Clad or RCS	2
6 - 11	SITE AREA EMERGENCY	Loss or potential loss of **ANY** two barriers, **OR** Potential loss of 2 barriers with the loss of the 3rd barrier	3
12, 13	GENERAL EMERGENCY	Loss of **ANY** two barriers **AND** Loss or potential loss of the third barrier	4

5. Implement the appropriate ECG Attachment per above table.
6. Continue to review the Fission Product Barrier Table for changes that could result in emergency escalation or de-escalation.

Salem – Fission Product Barrier Table

FPB Category	Fuel Clad Barrier Potential Loss (4 pts)	Fuel Clad Barrier Loss (5 pts)	Reactor Coolant System Barrier Potential Loss (4 pts)	Reactor Coolant System Barrier Loss (5 pts)	Containment Barrier Potential Loss (2 pts)	Containment Barrier Loss (3 pts)
RCS or SG Tube Leakage	None	None	**RB1.P** RCS leakage **> 50 gpm** due to **EITHER:** • **UNISOLABLE** RCS leakage • SG tube leakage **RB2.P** CFST Thermal Shock **RED** path conditions met	**RB1.L** An automatic or manual ECCS (SI) actuation required by **EITHER:** • **UNISOLABLE** RCS leakage • SG tube **RUPTURE**	None	**CB1.L** A leaking or **RUPTURED** SG is **FAULTED** outside of containment
Inadequate Heat Removal	**FB1.P** CFST Core Cooling **PURPLE** path conditions met **FB2.P** CFST Heat Sink **RED** path exists due to actual loss of secondary heat sink and heat sink is required	**FB1.L** CFST Core Cooling **RED** path conditions met	**RB3.-P** CFST Heat Sink **RED** path exists due to actual loss of secondary heat sink and heat sink is required	None	**CB1.P** CFST Core Cooling **RED** path conditions met **AND** Restoration procedure 1(2)EOP-FRCC-1 **NOT** effective within **15 min.**	None
CMT Radiation / RCS Activity	None	**FB3.L** Containment radiation monitor 1(2)R44A or 1(2)R44B reading **> 300 R/hr** **FB3.L** Coolant activity **> 300 µCi/gm dose equivalent I-131**	None	**RB2.L** **ANY** of the following containment radiation monitor readings: • 1(2)R2 **> 1000 mR/hr** • 1(2)R44A **> 10 R/hr** • 1(2)R44B **> 10 R/hr**	**CB2.P** Containment radiation monitor 1(2)R44A or 1(2)R44B reading **> 2000 R/hr**	None
CMT Integrity or Bypass	None	None	None	None	**CB3.P** CFST Containment **RED** path conditions met **CB4.P** Containment hydrogen concentration **> 4%** **CB5.P** Containment pressure **> 15 psig** with **< one full train of containment depressurization equipment** operating per design for **≥ 15 min.** (Notes 1, 10)	**CB2.L** Containment isolation is required **AND EITHER:** • Containment integrity has been lost based on Emergency Coordinator judgment • **UNISOLABLE** pathway from containment to the environment exists **CB3.L** Indications of RCS leakage outside of containment
EC Judgment	**FB3.P** **ANY** condition in the opinion of the Emergency Coordinator that indicates potential loss of the Fuel Clad barrier	**FB4.L** **ANY** condition in the opinion of the Emergency Coordinator that indicates loss of the Fuel Clad barrier	**RB4.P** **ANY** condition in the opinion of the Emergency Coordinator that indicates potential loss of the RCS barrier	**RB3.L** **ANY** condition in the opinion of the Emergency Coordinator that indicates loss of the RCS barrier	**CB6.P** **ANY** condition in the opinion of the Emergency Coordinator that indicates potential loss of the Containment barrier	**CB4.L** **ANY** condition in the opinion of the Emergency Coordinator that indicates loss of the Containment barrier

NOTES

Note 1: The Emergency Coordinator should declare the event promptly upon determining that time limit has been exceeded, or will likely be exceeded.

Note 10: One full train of depressurization equipment consists of **EITHER**:
- at least 5 CFCUs running in low speed with **NO** Containment Spray train in service
- at least 3 CFCUs running in slow speed with one Containment Spray train in service

Modes: 1 Power Operations; 2 Startup; 3 Hot Standby; 4 Hot Shutdown; 5 Cold Shutdown; 6 Refueling; D Defueled

WALL CHART (HOT)

EP-SA-325-130

Revision 0

Prepared for PSEG by Operations Support Services, Inc. 12-8-16

R — Abnormal Rad Levels / Rad Effluent

1 — Offsite Rad Conditions

GENERAL EMERGENCY — Implement Att. 4

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

RG1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

In the absence of dose assessment results, reading on **ANY** Table R-1 effluent radiation monitor **> column "GE"** for **≥ 15 min.** (Notes 1, 2, 3, 4)

RG1.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Dose assessment using actual meteorology indicates doses **> 1,000 mrem TEDE** or **5,000 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** (Note 4)

RG1.3 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Field survey results indicate **EITHER** of the following at or beyond the **PROTECTED AREA** boundary:

- Closed window dose rates **> 1,000 mR/hr** expected to continue for **≥ 60 min.**
- Analyses of field survey samples indicate I-131 concentration **> 3.85E-06 µCi/cc**

(Notes 1, 2)

SITE AREA EMERGENCY — Implement Att. 3

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

RS1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

In the absence of dose assessment results, reading on **ANY** Table R-1 effluent radiation monitor **> column "SAE"** for **≥ 15 min.** (Notes 1, 2, 3, 4)

RS1.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Dose assessment using actual meteorology indicates doses **> 100 mrem TEDE** or **500 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** (Note 4)

RS1.3 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Field survey results indicate **EITHER** of the following at or beyond the **PROTECTED AREA** boundary:

- Closed window dose rates **> 100 mR/hr** expected to continue for **≥ 60 min.**
- Analyses of field survey samples indicate I-131 concentration **> 3.85E-07 µCi/cc**

(Notes 1, 2)

ALERT — Implement Att. 2

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

RA1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

In the absence of dose assessment results, reading on **ANY** Table R-1 effluent radiation monitor **> column "ALERT"** for **≥ 15 min.** (Notes 1, 2, 3, 4)

RA1.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Dose assessment using actual meteorology indicates doses **> 10 mrem TEDE** or **50 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** (Note 4)

RA1.3 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses **> 10 mrem TEDE** or **50 mrem thyroid CDE** at or beyond the **MINIMUM EXCLUSION AREA** for **60 min.** of exposure (Notes 1, 2)

RA1.4 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Field survey results indicate **EITHER** of the following at or beyond the **PROTECTED AREA** boundary (Notes 1, 2):

- Closed window dose rates **> 10 mR/hr** expected to continue **≥ 60 min.**
- Analyses of field survey samples indicate I-131 concentration **> 3.85E-08 µCi/cc.**

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

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

RU1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Reading on **ANY** Table R-1 effluent radiation monitor **> column "UE"** for **≥ 60 min.** (Notes 1, 2, 3)

RU1.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Sample analysis for a gaseous or liquid release indicates a concentration or release rate > Table R-2 threshold for **≥ 60 min.** (Notes 1, 2)

2 — Irradiated Fuel Events

GENERAL EMERGENCY — Implement Att. 4

Spent fuel pool level at the top of the fuel racks

RG2.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Spent fuel pool level **CANNOT** be restored to at least 105.5 ft. for ≥ 60 min. (Note 1)

Table R-1 Effluent Monitor Classification Thresholds *

Release Point		Monitor	GE	SAE	Alert	UE
Gaseous	Plant Vent Effluent Noble Gas Unit 1 + Unit 2	1R41D + 2R41D **OR** SPDS combined release rate	8.48E+09 µCi/sec	8.48E+08 µCi/sec	4.84E+07 µCi/sec	4.84E+05 µCi/sec
Liquid	Containment Fan Coil Process	1(2)R13A/B	------	------	------	1.64E+03 cpm
Liquid	Liquid Radwaste Disposal Process	1R18 2R18	------	------	------	U1= 5.50E+05 cpm U2= 9.90E+05 cpm
Liquid	Steam Generator Blowdown Process	1R19A-D 2R19A-D	------	------	------	U1= 6.40E+03 cpm U2= 8.30E+03 cpm
Liquid	Non-Rad Liquid Waste	2R37	------	------	------	3.60E+03 cpm

SITE AREA EMERGENCY — Implement Att. 3

Spent fuel pool level at the top of the fuel racks

RS2.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Lowering of spent fuel pool level to **105.5 ft.**

ALERT — Implement Att. 2

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

RA2.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Uncovery of irradiated fuel in the **REFUELING PATHWAY**

RA2.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Damage to irradiated fuel resulting in a release of radioactivity that causes a High alarm on **ANY** of the following radiation monitors:

Fuel Handling Bldg

- 1(2)R5 Fuel Handling Bldg
- 1(2)R9 Fuel Storage Area
- 1(2)R32A Fuel Handling Crane Fuel Handling Bldg (local monitor)
- 1(2)R41A Plant Vent

Containment

- 1(2)R2 Containment General Area 130 ft elevation
- 1(2)R11A Containment Air - Particulate
- 1(2)R12A Containment Vent - Noble Gas
- 1(2)R12B Containment Vent - Iodine

RA2.3 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Lowering of spent fuel pool level to **115 ft.**

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

UNPLANNED loss of water level above irradiated fuel

RU2.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

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

- Confirmed SFP low level alarm (OHA-C35 SFP LVL LO)
- RVLIS - Refueling Mode
- Visual observation (local or remote)

AND
VALID area radiation monitor reading rise on **ANY** of the following:

- 1(2)R5 Fuel Handling Bldg
- 1(2)R9 Fuel Storage Area
- 1(2)R32A Fuel Handling Crane Fuel Handling Bldg (local monitor)
- 1(2)R2 Containment General Area 130 ft elevation
- Temporary ARMs on 130 ft elevation of the Containment or Fuel Handling Building

3 — Area Radiation Levels

None

Table R-2 Effluent Sample Classification Thresholds

Release Point		Sample	Threshold
Gaseous	Plant Vent	NG	6.40E-03 µCi/cc
		I-131	5.60E-07 µCi/cc
	Unmonitored	Isotopic	2 x ODCM 3/4.11.2
Liquid	Containment Fan Coil	Isotopic	2 x ODCM 3/4.11.1
Liquid	Liquid Radwaste Disposal	Isotopic	2 x ODCM 3/4.11.1
Liquid	Steam Generator Blowdown	Isotopic	2 x ODCM 3/4.11.1
Liquid	Chemical Waste Basin	Isotopic	2 x ODCM 3/4.11.1
Liquid	Unmonitored	Isotopic	2 x ODCM 3/4.11.1

ALERT — Implement Att. 2

Radiation levels that **IMPEDE** access to equipment necessary for normal plant operations, cooldown or shutdown

RA3.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Dose rates **> 15 mR/hr** in **EITHER** of the following:

- Control Room (1(2)R1A)
- Central Alarm Station

RA3.2 | | | 3 | 4 | | | |

An **UNPLANNED** event results in radiation levels that prohibit or **IMPEDE** access to **ANY** Table R-3 rooms or areas (Note 5)

Table R-3 Safe Operation & Shutdown Rooms/Areas

Unit 1/2 Room/Area	Mode Applicability
78' Electrical Penetration Area	4
64' Switchgear Room	4
SI Pump Room	3, 4
45' RHR Pump Rooms	3, 4

4 — Spent Fuel Transit & Storage

None

None

Damage to a loaded cask **CONFINEMENT BOUNDARY**

RU4.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Damage to a Multi Purpose Canister (MPC) **CONFINEMENT BOUNDARY** as indicated by on-contact radiation readings ≥ **EITHER** of the following:

- **600 mR/hr (gamma + neutron)** on the surface of the spent fuel cask, excluding the air vents
- **60 mR/hr (gamma + neutron)** on the top of the spent fuel cask

H — Hazards

1 — Security

None

SITE AREA EMERGENCY — Implement Att. 3

HOSTILE ACTION within the **PROTECTED AREA**

HS1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

A **HOSTILE ACTION** is occurring or has occurred within the **PROTECTED AREA** as reported by the Security Shift Manager or designee (Note 6)

ALERT — Implement Att. 2

HOSTILE ACTION within the **OWNER CONTROLLED AREA** or airborne attack threat within 30 minutes

HA1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

A **HOSTILE ACTION** is occurring or has occurred within the **OCA** as reported by the Security Shift Manager or designee (Note 6)
OR
A **VALIDATED** notification from NRC of an aircraft attack threat within **30 min.** of the site (Note 6)

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

Confirmed **SECURITY CONDITION** or threat

HU1.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |
(Common Site)

A **SECURITY CONDITION** that does **NOT** involve a **HOSTILE ACTION** as reported by the Security Shift Manager or designee (Note 6)
OR
Notification of a credible security threat directed at the site – (determined by security in accordance with SY-AA-101-132, "Threat Assessment") (Note 6)
OR
A **VALIDATED** notification from the NRC providing information of an aircraft threat (Note 6)

2 — Seismic Event

None

None

[Refer to CA6.1 or SA9.1 for potential escalation due to a seismic event]

None

Seismic event greater than OBE levels

HU2.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |
(Common Site)

Control room personnel feel an actual or potential seismic event
AND
The occurrence of a seismic event is confirmed in a manner deemed appropriate by the Shift Manager or Emergency Coordinator

3 — Natural or Tech. Hazard

None

None

[Refer to CA6.1 or SA9.1 for potential escalation due to a hazardous event]

None

Hazardous event

HU3.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |
(Common Site)

A tornado strike within the **PROTECTED AREA**

HU3.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Internal room or area **FLOODING** of a magnitude sufficient to require manual or automatic electrical isolation of a **SAFETY SYSTEM** component needed for the current operating mode

HU3.3 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

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)

HU3.4 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |
(Common Site)

A hazardous event that results in on-site conditions sufficient to prohibit the plant staff from accessing the site via personal vehicles (Note 7)

4 — Fire

None

None

[Refer to CA6.1 or SA9.1 for potential escalation due to fire]

Table H-1 Fire Areas

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

FIRE potentially degrading the level of safety of the plant

HU4.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

A **FIRE** is **NOT** extinguished within **15 min.** of **ANY** of the following fire detection indications (Note 1):

- 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

AND
FIRE is located in **ANY** Table H-1 area

HU4.2 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

Receipt of a single fire alarm (i.e., **NO** other indications of a **FIRE**)
AND
The fire alarm is indicating a **FIRE** within **ANY** Table H-1 area
AND
The existence of a **FIRE** is **NOT** verified within **30 min.** of alarm receipt (Note 1)

HU4.3 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |
(Common Site)

A **FIRE** within the plant **PROTECTED AREA NOT** extinguished within **60 min.** of the initial report, alarm or indication (Note 1)

HU4.4 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |
(Common Site)

A **FIRE** within the plant **PROTECTED AREA** that requires firefighting support by an offsite fire response agency to extinguish

5 — Hazardous Gases

None

Table H-2 Safe Operation & Shutdown Rooms/Areas

Unit 1/2 Room/Area	Mode Applicability
78' Electrical Penetration Area	4
64' Switchgear Room	4
SI Pump Room	3, 4
45' RHR Pump Rooms	3, 4

Gaseous release **IMPEDING** access to equipment necessary for normal plant operations, cooldown or shutdown

HA5.1 | | | 3 | 4 | | | |

A Release of a toxic, corrosive, asphyxiant or flammable gas into **ANY** Table H-2 rooms or areas
AND
Entry into the room or area is prohibited or **IMPEDED** (Note 5)

None

6 — Control Room Evacuation

None

Inability to control a key safety function from outside the Control Room

HS6.1 | 1 | 2 | 3 | 4 | 5 | 6 | |

An event has resulted in plant control being transferred from the Control Room to the Remote Shutdown Panel (RSP)
AND
Control of **ANY** of the following key safety functions is **NOT** reestablished within 15 min. (Note 1):

- Reactivity (modes 1, 2 and 3 **only**)
- RPV inventory
- RCS heat removal

Control Room evacuation resulting in transfer of plant control to alternate locations

HA6.1 | 1 | 2 | 3 | 4 | 5 | 6 | DEF |

An event has resulted in plant control being transferred from the Control Room to the Remote Shutdown Panel (RSP)

None

7 — EC Judgment

Other conditions exist which in the judgment of the Emergency Coordinator warrant declaration of a **GENERAL EMERGENCY**

HG7.1 | 1 | 2 | 3 | 4 | 5 | 6 | D |

Other conditions exist which in the judgment of the Emergency Coordinator 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.

Other conditions existing that in the judgment of the Emergency Coordinator warrant declaration of a **SITE AREA EMERGENCY**

HS7.1 | 1 | 2 | 3 | 4 | 5 | 6 | D |

Other conditions exist which in the judgment of the Emergency Coordinator 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.

Other conditions exist that in the judgment of the Emergency Coordinator warrant declaration of an **ALERT**

HA7.1 | 1 | 2 | 3 | 4 | 5 | 6 | D |

Other conditions exist which, in the judgment of the Emergency Coordinator, 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.

Other conditions existing that in the judgment of the Emergency Coordinator warrant declaration of an **UNUSUAL EVENT**

HU7.1 | 1 | 2 | 3 | 4 | 5 | 6 | D |

Other conditions exist which, in the judgment of the Emergency Coordinator, 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	2	3	4	5	6	D
Power Operations	Startup	Hot Standby	Hot Shutdown	Cold Shutdown	Refueling	Defueled

C — Cold S/D / Refuel System Malfunct.

1 — RCS Level

GENERAL EMERGENCY — Implement Att. 4

Loss of RCS inventory affecting fuel clad integrity with containment challenged

CG1.1 | | | | | 5 | 6 |

RCS level **CANNOT** be monitored for **≥ 30 min.** (Note 1)
AND
Core uncovery is indicated by **ANY** of the following:

- R44A **> 6.3 R/hr**
- R10B **> 5,740 mR/hr**
- R2 **> 130 mR/hr**
- Erratic Source Range Monitor indication
- **ANY UNPLANNED** RCS leakage indication, Table C-1, of sufficient magnitude to indicate core uncovery

AND
ANY Containment Challenge indication, Table C-2

Table C-2 Containment Challenge Indications

- **CONTAINMENT CLOSURE NOT** established (Note 9)
- Containment hydrogen concentration **> 4%**
- **UNPLANNED** rise in Containment pressure

SITE AREA EMERGENCY — Implement Att. 3

Loss of RCS inventory affecting core decay heat removal capability

CS1.1 | | | | | 5 | 6 |

RCS level **CANNOT** be monitored for **≥ 30 min.** (Note 1)
AND
Core uncovery is indicated by **ANY** of the following:

- R44A **> 6.3 R/hr**
- R10B **> 5,740 mR/hr**
- R2 **> 130 mR/hr**
- Erratic Source Range Monitor indication
- **ANY UNPLANNED** RCS leakage indication, Table C-1, of sufficient magnitude to indicate core uncovery

Table C-1 RCS Leakage Indications

- Rise in Containment sump pump run frequency
- Aux Building sump level rise
- PRT level rise
- RWST level rise
- RCDT level rise
- Rise in RCS make-up rate
- Observation of RCS leakage that is **UNISOLABLE**

ALERT — Implement Att. 2

Significant loss of RCS inventory

CA1.1 | | | | | 5 | 6 |

UNPLANNED loss of RCS inventory as indicated by RCS level **< 97.5 ft**

CA1.2 | | | | | 5 | 6 |

RCS level **CANNOT** be monitored for **≥ 15 min.** (Note 1)
AND
ANY UNPLANNED RCS leakage indication, Table C-1, due to a loss of RCS inventory

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

UNPLANNED loss of RCS inventory

CU1.1 | | | | | 5 | 6 |

UNPLANNED loss of reactor coolant results in RCS level below the established control band for **≥ 15 min.** (Note 1)

CU1.2 | | | | | 5 | 6 |

RCS level **CANNOT** be monitored
AND
ANY UNPLANNED RCS leakage indication, Table C-1, due to a loss of RCS inventory

2 — Loss of AC Power

ALERT — Implement Att. 2

Loss of **ALL** offsite and **ALL** onsite AC power to vital buses for 15 minutes or longer

CA2.1 | | | | | 5 | 6 | DEF |

Loss of **ALL** offsite and **ALL** onsite AC power to 4 KV vital buses for **≥ 15 min.** (Note 1)

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

Loss of **ALL** but one AC power source to vital buses for 15 minutes or longer

CU2.1 | | | | | 5 | 6 | DEF |

AC power capability to 4 KV vital buses reduced to a single power source for **≥ 15 min.** (Note 1)
AND
ANY additional single power source failure will result in loss of **ALL** AC power to **SAFETY SYSTEMS**

3 — RCS Temp.

None

ALERT — Implement Att. 2

Inability to maintain plant in cold shutdown

CA3.1 | | | | | 5 | 6 |

UNPLANNED increase in RCS temperature to **> 200°F** due to a loss of RCS cooling for > Table C-3 duration (Note 1)
OR
UNPLANNED RCS pressure increase **> 10 psig** (this portion of the EAL does **NOT** apply in solid plant conditions)

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

UNPLANNED increase in RCS temperature

CU3.1 | | | | | 5 | 6 |

UNPLANNED increase in RCS temperature to **> 200°F**

CU3.2 | | | | | 5 | 6 |

Loss of **ALL** RCS temperature and RCS level indication for **≥ 15 min.** (Note 1)

Table C-3 RCS Heatup Duration Thresholds

RCS Status	CONTAINMENT CLOSURE	Duration Threshold
Intact **AND NOT** reduced inventory	**NOT** Applicable	60 minutes **
NOT Intact **OR** reduced inventory	Established	20 minutes **
NOT intact **OR** reduced inventory	**NOT** Established	0 minutes

** If an RCS heat removal system is in operation within this time frame and RCS temperature is being reduced, the EAL is **NOT** applicable

4 — Loss of DC Power

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

Loss of Vital DC power for 15 minutes or longer

CU4.1 | | | | | 5 | 6 |

< 114 VDC bus voltage indications on **required** 125 VDC vital buses for **≥ 15 min.**
OR
< 25 VDC bus voltage indications on **required** 28 VDC vital buses for **≥ 15 min.**

None

Table C-4 Communications Methods

System	Onsite	Offsite	NRC
Direct Inward Dial System (DID)	X	X	X
Station Page System (Gaitronics)	X		
Station Radio System	X		
Nuclear Emergency Telephone System (NETS)		X	X
Centrex Phone System (ESSX)		X	X
NRC (ENS)			X

5 — Loss of Commun.

None

None

UNUSUAL EVENT — Implement Att. 1 (Att. 24 for Common Site)

Loss of **ALL** onsite or offsite communications capabilities

CU5.1 | | | | | 5 | 6 | DEF |

Loss of **ALL** Table C-4 onsite communication methods
OR
Loss of **ALL** Table C-4 offsite communication methods
OR
Loss of **ALL** Table C-4 NRC communication methods

6 — Hazardous Event Affecting Safety Systems

None

Table C-5 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

ALERT — Implement Att. 2

Hazardous event affecting a **SAFETY SYSTEM** needed for the current operating mode

CA6.1 | | | | | 5 | 6 |

The occurrence of **ANY** Table C-5 hazardous event **AND EITHER**:

- Event damage has caused indications of degraded performance in at least one train of a **SAFETY SYSTEM** needed for the current operating mode
- The event has caused **VISIBLE DAMAGE** to a **SAFETY SYSTEM** component or structure needed for the current operating mode

None

NOTES

Note 1: The Emergency Coordinator should declare the event promptly upon determining that time limit has been exceeded, or will likely be exceeded.

Note 2: If an ongoing release is detected and the release start time is unknown, assume that the release duration has exceeded the specified time limit.

Note 3: If the effluent flow past an effluent monitor is known to have stopped, indicating that the release path is isolated, the effluent monitor reading is **NO** longer **VALID** for classification purposes.

Note 4: The pre-calculated effluent monitor values presented in EALs RA1.1, RS1.1 and RG1.1 should be used for emergency classification assessments until the results from a dose assessment using actual meteorology are available.

Note 5: 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.

Note 6: Shift Manager (SM) should implement the Prompt Actions of the Security Emergency Guideline Attachment located in NC.EP-EP.ZZ-0102, EC Response, prior to classification of a security emergency.

Key Information to obtain from Security Supervision upon SM notification of a security event:

- Determination if the security event is a **HOSTILE ACTION** or **SECURITY CONDITION**
- If a **HOSTILE ACTION**, is location the **OCA** or **PA**?

Note 7: This EAL does **NOT** apply to routine traffic impediments such as fog, snow, ice, or vehicle breakdowns or accidents.

Note 8: A manual scram action is **ANY** operator action, or set of actions, which causes the control rods to be rapidly inserted into the core, and does **NOT** include manually driving in control rods or implementation of boron injection strategies.

Note 9: If **CONTAINMENT CLOSURE** is re-established prior to exceeding the 30-min. time limit, declaration of a **GENERAL EMERGENCY** is **NOT** required.

Note 10: One full train of depressurization equipment consists of **EITHER**:

- at least 5 CFCUs running in low speed with **NO** Containment Spray train in service
- at least 3 CFCUs running in low speed with one Containment Spray train in service

Note 11: Refer to the Fission Product Barrier Table for possible event escalation due to RCS leakage or high RCS activity.

WALL CHART (COLD)

EP-SA-325-130

Revision 0

EAL WALL CHART - COLD CONDITIONS (RCS ≤ 200°F)

Prepared for PSEG by Operations Support Services, Inc. 12-8-16