*****						
		RG1 Release of gaseous radioactivity resulting in offsite dose greater than 1,000 mrem TEDE or 5,000 mrem thyroid CDE	SITE AREA EMERGENCY  RS1 Release of gaseous radioactivity resulting in offsite dose greater than 100 mrem TEDE or 500 mrem thyroid CDE	RA1 Release of gaseous or liquid radioactivity resulting in offsite dose greater than 10 mrem TEDE or 50 mrem thyroid CDE	RU1 Release of gaseous or liquid radioactivity greater than 2 times the ODCM limits for 60 minutes or longer	
		The state of the s	T 2 3 4 5 DEF  RS1.1 In the absence of real-time dose assessment, reading on any	Table 1	T 2 3 4 5 DEF  RU1.1  Reading on any Table R-1 effluent radiation monitor	
		Table R-1 effluent radiation monitor > column "GE" for ≥ 15 min. (Notes 1, 2, 3, 4) RG1.2	Table R-1 effluent radiation monitor > column "SAE" for ≥ 15 min. (Notes 1, 2, 3, 4) RS1.2	any Table R-1 effluent radiation monitor > column "ALERT" for ≥ 15 min. (Notes 1, 2, 3, 4) RA1.2	> column "UE" for ≥ 60 min. (Notes 1, 2, 3) RU1.2	
		Dose assessment using actual meteorology indicates doses > 1000 mrem TEDE or 5000 mrem thyroid CDE at or beyond the SITE BOUNDARY (Notes 3, 4)	Dose assessment using actual meteorology indicates doses > 100 mrem TEDE or 500 mrem thyroid CDE at or beyond the SITE BOUNDARY (Notes 3, 4)	Dose assessment using actual meteorology indicates doses > 10 mrem TEDE or 50 mrem thyroid CDE at or beyond the SITE BOUNDARY (Notes 3, 4)	Sample analysis for a gaseous or liquid release indicates a concentration or release rate > 2 x ODCM limits for ≥ 60 min. (Notes 1, 2)	
	Rad	RG1.3  Field survey results indicate EITHER of the following at or beyond the SITE BOUNDARY:	RS1.3  Field survey results indicate EITHER of the following at or beyond the SITE BOUNDARY:	RA1.3  Analysis of a liquid effluent sample indicates a concentration or release rate that would result in doses > 10 mrem TEDE or		
	Effluent	Closed window dose rates > 1000 mR/hr expected to continue for ≥ 60 min.     Analyses of field survey samples indicate thyroid CDE	Closed window dose rates > 100 mR/hr expected to continue for ≥ 60 min.     Analyses of field survey samples indicate thyroid CDE	50 mrem thyroid CDE at or beyond the SITE BOUNDARY for 60 min. of exposure (Notes 1, 2) RA1.4		
		> 5000 mrem for 60 min. of inhalation. (Notes 1, 2)	> 500 mrem for 60 min. of inhalation. (Notes 1, 2)	Field survey results indicate EITHER of the following at or beyond the SITE BOUNDARY:  - Closed window dose rates > 10 mR/hr expected to		
R				continue for ≥ 60 min.  - Analyses of field survey samples indicate thyroid CDE  > 50 mrem for 60 min. of inhalation. (Notes 1, 2)		
Abnorm		RG2 Spent fuel pool level cannot be restored to at least the top of the fuel racks for 60 minutes or longer  1 2 3 4 5 DEF	RS2 Spent fuel pool level at the top of the fuel racks  1 2 3 4 5 DEF	RA2 Significant lowering of water level above, or damage to, irradiated fuel  1 2 3 4 5 DEF	RU2 UNPLANNED loss of water level above irradiated fuel  1 2 3 4 5 DEF	
Rad Levels / Rad		RG2.1  Spent fuel pool level cannot be restored ≥ 95 ft. 3 in. ele. for > 60 min. (Note 1)	RS2.1 Lowering of spent fuel pool level to ≤ 95 ft. 3 in. ele.	RA2.1 Uncovery of irradiated fuel in the REFUELING PATHWAY	RU2.1 UNPLANNED water level drop in the REFUELING PATHWAY as indicated by low water level alarm (A-04 6-6) or indication	
Effluent	2	Table R-1 Effluent Mon	itor Classification Thresholds	RA2.2  Damage to irradiated fuel resulting in a release of radioactivity  AND	AND UNPLANNED rise in area radiation levels as indicated by any of the following radiation monitors:	
	Irradiated Fuel Event		SAE         Alert         UE           9 μCi/sec         2.13E+08 μCi/sec         2.13E+07 μCi/sec         1.80E+06 μCi/sec	Any of the following radiation monitor indications:  - Reactor Bldg Vent Rad Monitor Channel A or B (> 3 mR/hr)  - ARM Channel 26 New Fuel Vault (> 6 mR/hr)	- ARM Channel 26 New Fuel Vault - ARM Channel 27 North of Fuel Pool - ARM Channel 28 Between Reactor and Fuel Pool - ARM Channel 29 Cask Wash Area	
		Reactor Bldg Vent Noble Gas CAC-AQH-1264-3		<ul> <li>ARM Channel 27 North of Fuel Pool (&gt; 10 mR/hr)</li> <li>ARM Channel 28 Between Reactor and Fuel Pool (&gt; 1000 mR/hr)</li> </ul>	- ANN Channel 29 Cash Wash Alea	
			8 μCi/sec   1.07E+07 μCi/sec   1.07E+06 μCi/sec   1.13E+04 μCi/sec     2 X hi alarm	- ARM Channel 29 Cask Wash Area (> 40 mR/hr)  RA2.3  Lowering of spent fuel pool level to ≤ 105 ft. 3 in. ele.		
		Service Water Effluent Radioactivity D12-RM-K605	2 X hi-hi alarm	RA3 Radiation levels that IMPEDE access to equipment necessary for normal plant operations, cooldown or shutdown  1 2 3 4 5 DEF		
	3	None	Table R-2 Safe Shutdown Rooms/Areas  Room / Area	RA3.1  Dose rates > 15 mR/hr in EITHER of the following areas: Control Room (ARM Channel 1-1)		
	Area Rad Levels	- Reactor Building -17' North RHR Unit 1 & 2 3, 4, 5 - Reactor Building -17' South RHR Unit 1 & 2 3, 4, 5		OR Central Alarm Station (by survey) RA3.2	None	
			actor Building 20' East & West MCC Areas Unit 1 & 2 3, 4, 5 actor Building 20' Pipe Tunnel Unit 1 & 2 3, 4, 5  HS1 Hostile Action within the Protected Area	An UNPLANNED event results in radiation levels that prohibit or IMPEDE access to any Table R-2 rooms or areas (Note 5)  HA1 Hostile action within the owner controlled area or airborne attack	HU1 Confirmed SECURITY CONDITION or threat	
		1 2 3 4 5 DEF HG1.1	1 2 3 4 5 DEF HS1.1	threat  1 2 3 4 5 DEF  HA1.1	1 2 3 4 5 DEF HU1.1	
	1	A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Security Shift Supervision AND EITHER of the following has occurred:	A HOSTILE ACTION is occurring or has occurred within the PROTECTED AREA as reported by the Security Shift Supervision	A HOSTILE ACTION is occurring or has occurred within the OWNER CONTROLLED AREA as reported by the Security Shift Supervision	A SECURITY CONDITION that does not involve a HOSTILE ACTION as reported by the Security Shift Supervision	
	Security	Any of the following safety functions cannot be controlled or maintained - Reactivity		HA1.2 A validated notification from NRC of an aircraft attack threat within 30 min. of the site	HU1.2 Notification of a credible security threat directed at the site HU1.3	
		-RPV water level -RCS heat removal OR Damage to spent fuel has occurred or is IMMINENT			A validated notification from the NRC providing information of an aircraft threat	
	2			See CA6.1 for potential for upgrade to an	HU2 Seismic event greater than OBE levels  1 2 3 4 5 DEF	
	Seismic Event	None	None	Alert based on degraded safety system performance or damage	HU2.1 Seismic event > OBE per 0AOP-13.0	
					HU3 Natural or Technological Hazard  1 2 3 4 5 DEF	
					HU3.1 A tornado strike within the PROTECTED AREA HU3.2	
	3 Natural or Technical Hazard				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	
		None	None	See CA6.1 for potential for upgrade to an Alert based on degraded safety system	operating mode  HU3.3  Movement of personnel within the PROTECTED AREA is	
				performance or damage	IMPEDED due to an event external to the PROTECTED AREA involving hazardous materials (e.g., an offsite chemical spill or toxic gas release)	
					HU3.4 A hazardous event that results in onsite conditions sufficient to prohibit the plant staff from accessing the site via personal	
					vehicles (Note 7)  HU3.5 Intake Canal water level > +19 ft. Mean Sea Level	
					OR Intake Canal water level < -7.75 ft. Mean Sea Level  HU4 FIRE potentially degrading the level of safety of the plant	
					1 2 3 4 5 DEF	
Н				See CA6.1 for potential for upgrade to an Alert based on degraded safety system performance or damage	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)	
Hazards					Receipt of multiple (more than 1) fire alarms or indications     Field verification of a single fire alarm     AND     The FIRE is located within any Table H-1 area	
	4			Table H-1 Fire Areas	HU4.2 Receipt of a single fire alarm (i.e., no other indications of a	
	Fire	None	None	Reactor Building     Diesel Generator Building	FIRE) AND The fire alarm is indicating a FIRE within any Table H-1 area AND	
				Diesel 4-Day Tank Rooms     Service Water Building	The existence of a FIRE is not verified within 30 min. of alarm receipt (Note 1)  HU4.3	
				- Turbine Building - Control Building - CSTs	A FIRE within the plant PROTECTED AREA not extinguished within 60 min. of the initial report, alarm or indication (Note 1)	
				- Diesel Fuel Oil Storage tank	HU4.4 A FIRE within the plant PROTECTED AREA that requires firefighting support by an offsite fire response agency to	
			Table H-2 Safe Shutdown Rooms/Areas	HA5 Gaseous release IMPEDING access to equipment necessary for normal plant operations, cooldown or shutdown	extinguish	
	5	Do.	Room / Area Mode(s) actor Building -17' North RHR Unit 1 & 2 3, 4, 5	1 2 3 4 5 DEF HA5.1	None	
	Hazardous Gases	None - Re	actor Building -17' South RHR Unit 1 & 2 3, 4, 5 actor Building 20' East & West MCC Areas Unit 1 & 2 3, 4, 5 actor Building 20' Pipe Tunnel Unit 1 & 2 3, 4, 5	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)		
			HS6 Inability to control a key safety function from outside the Control Room  1 2 3 4 5 DEF	HA6 Control Room evacuation resulting in transfer of plant control to alternate locations  1 2 3 4 5 DEF		
	6		HS6.1 An event has resulted in plant control being transferred from the Control Room to the Remote Shutdown Panels	HA6.1 An event has resulted in plant control being transferred from the Control Room to the Remote Shutdown Panels		
	Control Room	None  AND  Control of any of the following key safety functions is not reestablished within 22.5 min. (Note 1):  Reactivity  RPV water level  RCS heat removal		ale solution testing the remote shallowing allela	None	
	Evacuation					
		HG7 Other conditions exist which in the judgment of the Site Emergency Coordinator warrant declaration of a General Emergency	HS7 Other conditions existing that in the judgment of the Site Emergency Coordinator warrant declaration of a Site Area Emergency	HA7 Other conditions exist that in the judgment of the Site Emergency Coordinator warrant declaration of an Alert	HU7 Other conditions existing that in the judgment of the Site Emergency Coordinator warrant declaration of a UE	
	7	HG7.1 Other conditions exist which in the judgment of the Site	HS7.1 Other conditions exist which in the judgment of the Site	HA7.1 Other conditions exist which, in the judgment of the Site	HU7.1 Other conditions exist which in the judgment of the Site	
	SEC	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	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	Emergency Coordinator, indicate that events are in progress or have occurred which involve an actual or potential substantial defination of the level of safety of the plant or a coordinate progressive properties.	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	
	Judgment	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	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.	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	racliny protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs.	
		immediate site area	Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.	exposure levels.		
					EU1 Damage to a loaded cask CONFINEMENT BOUNDARY  1 2 3 4 5 DEF  EU1.1	
IS	E FSI	None	None	None	Damage to a loaded canister confinement boundary as indicated by an on-contact radiation reading on the surface of a loaded spent fuel cask > any of the following:	
					- 1,400 mrem/hr on the HSM-H front surface - 10 mrem/hr on the HSM-H door centerline - 20 mrem/hr on the end shield wall exterior	
Mo	des:	<u>1</u> <u>2</u>	3 4 5	LINE	Brunswick Nuclear Plant Initial Emergency Actions 0PEP-02.1, Rev. 6 Draft A	
		Power Operations Startup	Hot Shutdown Cold Shutdown Refu	el Defueled		

		GENERAL EMERGENCY	SITE AREA EMERGENCY	ALERT	Unusual event
	1 RPV Level	CG1 Loss of RPV inventory affecting fuel clad integrity with Containment challenged  4 5  CG1.1  RPV level < TAF for ≥ 30 min. (Note 1)  AND  Any Containment Challenge indication, Table C-2  CG1.2  RPV level cannot be monitored for ≥ 30 min. (Note 1)  AND  Core uncovery is indicated by EITHER of the following:  - UNPLANNED increase in any Table C-1 sump or tank levels due to a loss of RPV inventory  - UNPLANNED increase in ARM Channel 28 Between Reactor and Fuel Pool > 1000 mR/hr  AND  Any Containment Challenge indication, Table C-2	CS1 Loss of RPV inventory affecting core decay heat removal capability  4 5  CS1.1  CONTAINMENT CLOSURE not established AND RPV level < 45 in. (Level 3)  CS1.2  CONTAINMENT CLOSURE established AND RPV level < TAF  CS1.3  RPV level < TAF  CS1.3  RPV level cannot be monitored for ≥ 30 min. (Note 1) AND  Core uncovery is indicated by EITHER of the following:  - UNPLANNED increase in any Table C-1 sump or tank levels due to a loss of RPV inventory  - UNPLANNED increase in ARM Channel 28 Between Reactor and Fuel Pool > 1000 mR/hr	CA1 Loss of RPV inventory  4 5  CA1.1  Loss of RPV inventory as indicated by RPV water level < 105 in. above TAF (Level 2)  CA1.2  RPV water level cannot be monitored for ≥ 15 min. (Note 1)  AND  UNPLANNED increase in any Table C-1 sump or tank levels due to a loss of RPV inventory	CU1 UNPLANNED loss of RPV inventory for 15 minutes or longer  4 5  CU1.1  UNPLANNED loss of reactor coolant results in RPV water level less than a required lower limit for ≥ 15 min. (Note 1)  CU1.2  RPV water level cannot be monitored AND  UNPLANNED increase in any Table C-1 sump or tank levels due to a loss of RPV inventory
	2 Loss of Emer. AC Power	None	None	CA2 Loss of all offsite and all onsite AC power to emergency buses for 15 minutes or longer  4 5 DEF  CA2.1  Loss of all offsite and all onsite AC power capability to Emergency 4 KV Buses E1(E3) and E2(E4) for ≥ 15 min. (Note 1)	CU2 Loss of all but one AC power source to emergency buses for 15 minutes or longer  4 5 DEF  CU2.1  AC power capability to Emergency 4 KV Buses E1(E3) and E2(E4) reduced to a single power source for ≥ 15 min. (Note 1 AND  Any additional single power source failure will result in loss of all unit-specific AC power to SAFETY SYSTEMS
Cold SD/ Refuel System Malfunct.	RCS Temp.	None	None	CA3 Inability to maintain plant in cold shutdown  4 5  CA3.1  UNPLANNED increase in RCS temperature to > 212°F for > Table C-3 duration (Note 1)  OR  UNPLANNED RPV pressure increase > 10 psig due to a loss of RCS cooling	CU3 UNPLANNED increase in RCS temperature  4 5  CU3.1  UNPLANNED increase in RCS temperature to > 212°F due to loss of decay heat removal capability  CU3.2  Loss of all RCS temperature and RPV level indication for ≥ 15 min. (Note 1)
	Loss of Vital DC Power	None	None	None	CU4 Loss of Vital DC power for 15 minutes or longer  4 5  CU4.1  < 105 VDC bus voltage indications on Technical Specification required 125 VDC buses for ≥ 15 min. (Note 1)
	5 Loss of Comm.	None	None	None	CU5 Loss of all onsite or offsite communications capabilities  4 5 DEF  CU5.1  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
	Hazardous Event Affecting Safety Systems	None	None	CA6 Hazardous event affecting a SAFETY SYSTEM needed for the current operating mode  4 5  CA6.1  The occurrence of any Table C-5 hazardous event AND  EITHER of the following:  - 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

Table C-1 Sumps & Tanks	Table C-2 Containment Challenge Indications
Drywell floor drain sump Drywell equipment drain sump RB floor drain sump RB equipment drain sump	<ul> <li>CONTAINMENT CLOSURE not established (Note 6)</li> <li>Primary Containment hydrogen concentration &gt; 6%</li> <li>Unplanned rise in PC pressure</li> </ul>
Torus Visual observation	Exceeding one or more Secondary Containment Control Maximum Safe Operating Area Radiation Levels (0EOP-03-SCCP Table 3)

Table C-5 Hazardous Events

Other events with similar hazard characteristics as determined by the Shift Manager

Seismic event (earthquake)

- High winds or tornado strike

- EXPLOSION

RCS Status	Containment Closure Status	Heat-up Duration
Intact	N/A	60 min.*
Not intact	established	20 min.*
	not established	0 min.

System	Onsite	Offsite	NRC
Public Address System	х		
PBX Telephone System	Х	X	X
Corporate Telephone Communications System	X	X	X
Commercial Telephones	X	X	X
Satellite Phones		×	X
Cellular Phones		X	X
NRC Emergency Telecommunications System			X

## Notes

Note 1: The SEC 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: If CONTAINMENT CLOSURE is re-established prior to exceeding the 30-minute time limit, declaration of a General Emergency is not required.

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.

Date & Time of Shutdown Date Time