

Facility:		Date of Exam:																			
Tier	Group	RO K/A Category Points												SRO-Only Points							
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2	G*	Total					
1. Emergency & Abnormal Plant Evolutions	1	3	3	3				3	3				3	18	3	3	6				
	2	2	1	2				2	1				1	9	2	2	4				
	Tier Totals	5	4	5				5	4				4	27	5	5	10				
2. Plant Systems	1	3	3	2	3	2	3	2	3	2	2	3	28	3	2	5					
	2	1	1	1	1	1	1	1	1	0	1	1	10	2	1	3					
	Tier Totals	4	4	3	4	3	4	3	4	2	3	4	38	5	3	8					
3. Generic Knowledge and Abilities Categories		1		2		3		4		10		1		2		3		4		7	
		3		3		2		2				2		2		1		2			

1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.
4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.
5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.
6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
7. *The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note # 1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
007EG2.4.31	Reactor Trip - Stabilization - Recovery / 1	4.2	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of annunciators alarms, indications or response procedures
008AA1.04	Pressurizer Vapor Space Accident / 3	2.8	2.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Feedwater pumps
009EK2.03	Small Break LOCA / 3	3	3.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S/Gs
011EG2.2.38	Large Break LOCA / 3	3.6	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of conditions and limitations in the facility license.
015AK2.07	RCP Malfunctions / 4	2.9	2.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RCP seals
022AK1.01	Loss of Rx Coolant Makeup / 2	2.8	3.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consequences of thermal shock to RCP seals
025AA1.19	Loss of RHR System / 4	2.6	2.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Block orifice bypass valve controller and indicators
027AA1.05	Pressurizer Pressure Control System Malfunction / 3	3.3	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Transfer of heaters to backup power supply
038EK1.04	Steam Gen. Tube Rupture / 3	3.1	3.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reflux boiling
054AK1.01	Loss of Main Feedwater / 4	4.1	4.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MFW line break depressurizes the S/G (similar to a steam line break)
055EG2.4.2	Station Blackout / 6	4.5	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
056AK3.01	Loss of Off-site Power / 6	3.5	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Order and time to initiation of power for the load sequencer
057AA2.05	Loss of Vital AC Inst. Bus / 6	3.5	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S/G pressure and level meters
062AA2.02	Loss of Nuclear Svc Water / 4	2.9	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The cause of possible SWS loss
065AA2.03	Loss of Instrument Air / 8	2.6	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Location and isolation of leaks
077AK3.02	Generator Voltage and Electric Grid Disturbances / 6	3.6	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Actions contained in abnormal operating procedures for voltage and grid disturbances
WE04EK2.2	LOCA Outside Containment / 3	3.8	4.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems and relations between the proper operation of these systems to the operation of the facility.
WE05EK3.2	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal, abnormal and emergency operating procedures associated with (Loss of Secondary Heat Sink).

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		RO	SRO											
003AK3.10	Dropped Control Rod / 1	3.2	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RIL and PDIL
032AA2.07	Loss of Source Range NI / 7	2.8	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Maximum allowable channel disagreement
051AA1.04	Loss of Condenser Vacuum / 4	2.5	2.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rod position
060AG2.1.25	Accidental Gaseous Radwaste Rel. / 9	3.9	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to interpret reference materials such as graphs, monographs and tables which contain performance data.
061AK2.01	ARM System Alarms / 7	2.5	2.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detectors at each ARM system location
068AK3.02	Control Room Evac. / 8	3.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System response to turbine trip
WE01EK1.2	Rediagnosis / 3	3.4	4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal, abnormal and emergency operating procedures associated with (Reactor Trip or Safety Injection / Rediagnosis).
WE13EA1.1	Steam Generator Over-pressure / 4	3.1	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.
WE16EK1.1	High Containment Radiation / 9	2.7	3.0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Components, capacity, and function of emergency systems.

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		RO	SRO											
003G2.4.35	Reactor Coolant Pump	3.8	4.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of local auxiliary operator tasks during emergency and the resultant operational effects
004G2.1.23	Chemical and Volume Control	4.3	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
004K6.31	Chemical and Volume Control	3.1	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Seal injection system and limits on flow range
005K2.03	Residual Heat Removal	2.7	2.8	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RCS pressure boundary motor-operated valves
005K6.03	Residual Heat Removal	2.5	2.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RHR heat exchanger
006K6.02	Emergency Core Cooling	3.4	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Core flood tanks (accumulators)
007K1.03	Pressurizer Relief/Quench Tank	3.0	3.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RCS
007K4.01	Pressurizer Relief/Quench Tank	2.6	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Quench tank cooling
008K2.02	Component Cooling Water	3.0	3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CCW pump, including emergency backup
010K1.08	Pressurizer Pressure Control	3.2	3.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PZR LCS
012K1.05	Reactor Protection	3.8	3.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ESFAS

KA	NAME / SAFETY FUNCTION:	IR	RO	SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
012K5.01	Reactor Protection	3.3	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNB
013K5.02	Engineered Safety Features Actuation	2.9	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safety system logic and reliability
022A1.01	Containment Cooling	3.6	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Containment temperature
022A2.03	Containment Cooling	2.6	3.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fan motor thermal overload/high-speed operation
026A3.02	Containment Spray	3.9	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Verification that cooling water is supplied to the containment spray heat exchanger
039A2.01	Main and Reheat Steam	3.1	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flow paths of steam during a LOCA
059A3.02	Main Feedwater	2.9	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Programmed levels of the S/G
061A1.01	Auxiliary/Emergency Feedwater	3.9	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	S/G level
062G2.1.27	AC Electrical Distribution	3.9	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of system purpose and or function.
063K2.01	DC Electrical Distribution	2.9	3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Major DC loads
063K4.02	DC Electrical Distribution	2.9	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Breaker interlocks, permissives, bypasses and cross-ties.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
064A2.13	Emergency Diesel Generator	2.6	2.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Consequences of opening auxiliary feeder bus (ED/G sub supply)
073A4.02	Process Radiation Monitoring	3.7	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiation monitoring system control panel
073K3.01	Process Radiation Monitoring	3.6	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radioactive effluent releases
076K3.02	Service Water	2.5	2.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Secondary closed cooling water
078K4.01	Instrument Air	2.7	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Manual/automatic transfers of control
103A4.03	Containment	2.7	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ESF slave relays

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
001K2.05	Control Rod Drive	3.1	3.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	M/G sets
002A2.03	Reactor Coolant	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loss of forced circulation
016K1.08	Non-nuclear Instrumentation	3.4	3.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PZR PCS
028K5.01	Hydrogen Recombiner and Purge Control	3.4	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Explosive hydrogen concentration
033A1.02	Spent Fuel Pool Cooling	2.8	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiation monitoring systems
035G2.2.40	Steam Generator	3.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to apply technical specifications for a system.
055K3.01	Condenser Air Removal	2.5	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Main condenser
071K4.06	Waste Gas Disposal	2.7	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sampling and monitoring of waste gas release tanks
079A4.01	Station Air	2.7	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cross-tie valves with IAS
086K6.04	Fire Protection	2.6	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fire, smoke and heat detectors

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
G2.1.15	Conduct of operations	2.7	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of administrative requirements for temporary management directives such as standing orders, night orders, Operations memos, etc.
G2.1.3	Conduct of operations	3.7	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of shift or short term relief turnover practices.
G2.1.37	Conduct of operations	4.3	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of procedures, guidelines or limitations associated with reactivity management
G2.2.12	Equipment Control	3.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of surveillance procedures.
G2.2.13	Equipment Control	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of tagging and clearance procedures.
G2.2.42	Equipment Control	3.9	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
G2.3.13	Radiation Control	3.4	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiological safety procedures pertaining to licensed operator duties
G2.3.6	Radiation Control	2.0	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to approve release permits
G2.4.30	Emergency Procedures/Plans	2.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of events related to system operations/status that must be reported to internal organizations or outside agencies.
G2.4.35	Emergency Procedures/Plans	3.8	4.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of local auxiliary operator tasks during emergency and the resultant operational effects

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
008AA2.28	Pressurizer Vapor Space Accident / 3	3.3	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Safety parameter display system indications
011EG2.4.11	Large Break LOCA / 3	4.0	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Knowledge of abnormal condition procedures.
025AG2.4.31	Loss of RHR System / 4	4.2	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Knowledge of annunciators alarms, indications or response procedures
056AA2.73	Loss of Off-site Power / 6	3.5	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PZR heater on/off
065AG2.1.30	Loss of Instrument Air / 8	4.4	4.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ability to locate and operate components, including local controls.
WE04EA2.1	LOCA Outside Containment / 3	3.4	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
003AG2.1.30	Dropped Control Rod / 1	4.4	4.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to locate and operate components, including local controls.
028AG2.4.20	Pressurizer Level Malfunction / 2	3.8	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of operational implications of EOP warnings, cautions and notes.
068AA2.03	Control Room Evac. / 8	4	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	T-hot, T-cold and in-core temperatures
WE10EA2.1	Natural Circ. With Seam Void/ 4	3.2	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
003G2.4.41	Reactor Coolant Pump	2.9	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the emergency action level thresholds and classifications.
007A2.03	Pressurizer Relief/Quench Tank	3.6	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Overpressurization of the PZR
010G2.1.20	Pressurizer Pressure Control	4.6	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to execute procedure steps.
026A2.03	Containment Spray	4.1	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Failure of ESF
073A2.02	Process Radiation Monitoring	2.7	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Detector failure

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
034G2.4.20	Fuel Handling Equipment	3.8	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of operational implications of EOP warnings, cautions and notes.
072A2.03	Area Radiation Monitoring	2.7	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Blown power-supply fuses
079A2.01	Station Air	2.9	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cross-connection with IAS

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
G2.1.35	Conduct of operations	2.2	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the fuel handling responsibilities of SRO's
G2.1.40	Conduct of operations	2.8	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of refueling administrative requirements
G2.2.19	Equipment Control	2.3	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of maintenance work order requirements.
G2.2.35	Equipment Control	3.6	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to determine Technical Specification Mode of Operation
G2.3.5	Radiation Control	2.9	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to use radiation monitoring systems
G2.4.27	Emergency Procedures/Plans	3.4	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of "fire in the plant" procedures.
G2.4.39	Emergency Procedures/Plans	3.9	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the RO's responsibilities in emergency plan implementation.

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Facility: Plant Vogtle		Date of Examination: 02/22/2010
Examination Level: RO		Operating Test Number: 2010-301
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, D, P	Title: Critical Safety Function Status Tree Evaluation Description: Students will be provided a listing of plant parameters. This will require manually evaluating each status tree to determine the challenges to each tree and identify the highest priority challenge. K/A: G2.1.7 (RO 4.4)
Conduct of Operations	R, N	Title: Perform QPTR Calculation (QPTR) Description: Perform Quadrant Power Tilt Ration (QPTR) Calculation, both the top and bottom sections will be out of spec high. K/A: G2.1.37 (RO 4.3)
Equipment Control	R, D	Title: Construct Tagout for Unit 2 # 4 Nuclear Service Cooling Water (NSCW) Pump Description: Determine the appropriate hold points and required positions of components to safely isolate NSCW pump 2-1202-P4-004. Identification of K-2 links to clear control room alarms is not required. K/A: G2.2.13 (RO 4.1)
Radiation Control		Title: Not applicable. Description: Not applicable. K/A: Not applicable.
Emergency Procedures/Plan	S, N	Title: Emergency Recall & Roll Call for Security Emergency Description: An emergency recall and roll call is required to be performed for a security emergency. This requires the use of a different recall scenario. K/A: G2.4.43 (RO 3.2)
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (N)ew or (M)odified from bank (≥ 1) (P)revious 2 exams (≤ 1 ; randomly selected)		

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Facility: Vogtle		Date of Examination: 02/22/2010
Examination Level: SRO		Operating Test Number: 2010-301
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	R, M, P	<p>Title: Perform Emergency Boration Flow Path Verification</p> <p>Description: The plant will be in Mode 4 with the SI pumps common suction valve HV-8806 tagged shut and a sustained loss of instrument air to the unit. This will require the student to evaluate the effect of the loss of air on the boric acid flow paths in addition to the tagged component.</p> <p>K/A: G2.1.7 (SRO 4.7)</p>
Conduct of Operations	R, N	<p>Title: Determine Active License Status</p> <p>Description: The SRO will have to evaluate the status of 3 RO's to determine their license status for sitting the control board position.</p> <p>K/A: G2.1.4 (SRO 3.8)</p>
Equipment Control	R, D	<p>Title: Construct Tagout for Unit 2 # 4 Nuclear Service Cooling Water (NSCW) Pump</p> <p>Description: Determine the appropriate hold points and required positions of components to safely isolate NSCW pump 2-1202-P4-004.</p> <p>K/A: G2.2.13 (SRO 4.3)</p>
Radiation Control	R, N	<p>Title: Emergency Exposure Limits Calculation and Authorization</p> <p>Description: Historical data will be provided for individuals to receive an emergency exposure during a declared event. Data will be provided requiring a calculation to determine the exposure to be received, the student must determine the appropriate dose limit based on the expected dose.</p> <p>K/A: G2.3.4 (SRO 3.7)</p>
Emergency Procedures/Plan	R, N	<p>Title: Upgrade - Emergency Classification (From Alert to Site Area Emergency)</p> <p>Description: New data will be provided to the candidate to determine if an upgrade to a declared emergency is required. Once it is determined an upgrade is required, the ENN Notification Form will be required to be completed. This will be a time critical JPM.</p> <p>K/A: G2.4.41 (SRO 4.6)</p>
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
<p>* Type Codes & Criteria:</p> <p>(C)ontrol room, (S)imulator, or Class(R)oom</p> <p>(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)</p> <p>(N)ew or (M)odified from bank (≥ 1)</p> <p>(P)revious 2 exams (≤ 1; randomly selected)</p>		

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Facility: Vogtle		Date of Examination: 02/22/2010
Exam Level (circle one): RO / SRO-I / SRO-U		Operating Test No.: 2010-301
Control Room Systems® (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Dropped Rod Recovery in Mode 1 (RO / SRO-I) A dropped rod will be recovered IAW AOP-18003-C, Rod Control Malfunction Section A for Dropped Rods in Mode 1. During the recovery, the rod being retrieved will not move. This will require reconfiguring the rod control system back to its' previous state prior to attempting the dropped rod recovery. K/A: 003AA2.01 (RO 3.7 / SRO 3.9)	S, M, A	1
b. Respond to Failure of PRZR Level Instrument (RO / SRO-I) A PRZR level instrument will fail low requiring entry into AOP-18001 Section D. After to candidate attempts to place letdown back in service, a letdown isolation valve will NOT open requiring Excess Letdown to be placed into service. K/A: 028AA1.05 (RO 3.7 / SRO 3.6)	S, D, A	2
c. Transfer ECCS Pumps to Hot Leg Recirculation. Multiple Train "A" Components Fail to Align (RO / SRO-I) During alignment of ECCS to Hot Leg Recirculation, multiple Train A components will fail to align requiring the use of the RNO column. K/A: 006A4.05 (RO 3.9 / SRO 3.8)	S, D, A, P EN, L	3
d. Respond To RHR Pump Trip in Mode 4 (RO / SRO-I) An RHR pump will trip in Mode 4 requiring entry into AOP-18019, Section A, Loss of RHR Capability in Mode 4. The flow path through the procedure will require the candidate to start an RCP. K/A: 025G2.4.9 (RO 3.8 / SRO 4.2)	S, N, A, L	4P
e. Dilute Containment with Service Air in accordance with 19010-C, E-1, Loss of Reactor or Secondary Coolant, Step 29. (RO / SRO-I) The student will be required to use SOP 13130-1, section 4.4.2 to align service air to containment to dilute the hydrogen. K/A: 028A4.01 (RO 4.0 / SRO 4.0)	S, D, L	5

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<p>f. Synchronize Main Generator to the Grid. Field amps not indicated on one phase requires Main Turbine trip. (RO)</p> <p>After synchronizing the main generator the student must recognize that one phase does not show any current, requiring opening of the generator output breaker to prevent damage to the generator.</p> <p>K/A: 062A4.07 (RO 3.1)</p>	S, D, A, P	6
<p>g. Respond to Fuel Handling Building High Radiation (RO/SRO-I)</p> <p>High Radiation will occur due to dropped rod in FHB but auto actuation fails, manual system alignment is required.</p> <p>K/A: 061AA1.01 (RO 3.6 / SRO 3.6)</p>	S, D, A	7
<p>h. Transfer Steam Dumps to Steam Pressure Mode (RO / SRO-I)</p> <p>The student will be required to transfer steam dumps to the steam pressure mode using step 14 of AOP 18009-C. The steam dumps will not work, the student must shift the temperature control to the SG ARVs.</p> <p>K/A: 041A4.08 (RO 3.0 / SRO 3.1)</p>	S, N, A, L	4S

In-Plant Systems® (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
<p>i. Bypass CNMT HI-1 Bistables Following Loss of Heat Sink</p> <p>Bistables must be bypassed using the BTI equipment in order to align a feedwater flow path to the SGs during a loss of secondary heat sink. This will also require knowledge of how / where to obtain multiple BTI keys to bypass 2 trains of equipment (RO / SRO-I)</p> <p>K/A: 012A4.03 (3.6 / 3.6)</p>	D, E, L, P	7
<p>j. Locally Start the TDAFW Pump</p> <p>Following a Control Room evacuation, the TDAFW pump is required to be locally started at Shutdown Panel C. Local transfer switches must be manipulated, the T & T valve checked for proper status, and throttling of AFW flow from the local panel is required using available flow indications.</p> <p>K/A: 068AA1.02 (RO 4.3 / SRO 4.5)</p>	D, E, L	8
<p>k. Locally Isolate RCP Seals / ACCW per 19100-C, Attachment E</p> <p>During a loss of All AC power, the RCP seals are required to be isolated. Included on Attachment E is opening the breakers to the SG ARVs in preparation for local operation.</p> <p>K/A: 055G2.4.34 (RO 4.2 / SRO 4.1)</p>	M, E, L, R	6
<p>@ All control room (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>		
* Type Codes	Criteria for RO / SRO-I / SRO-U	

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(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	$\leq 9 / \leq 8 / \leq 4$
(E)mergency or abnormal in-plant	$\geq 1 / \geq 1 / \geq 1$
(EN)gineered Safety Feature	- / - / > 1 (control room system)
(L)ow-Power / Shutdown	$\geq 1 / \geq 1 / \geq 1$
(N)ew or (M)odified from bank including 1(A)	$\geq 2 / \geq 2 / \geq 1$
(P)revious 2 exams	$\leq 3 / \leq 3 / \leq 2$ (randomly selected)
(R)CA	$\geq 1 / \geq 1 / \geq 1$
(S)imulator	

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Facility: Vogtle		Date of Examination: 02/22/2010
Exam Level (circle one): RO / SRO-I / SRO-U		Operating Test No.: 2010-301
Control Room Systems® (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)		
System / JPM Title	Type Code*	Safety Function
a. Dropped Rod Recovery in Mode 1 (RO / SRO-I) A dropped rod will be recovered IAW AOP-18003-C, Rod Control Malfunction Section A for Dropped Rods in Mode 1. During the recovery, the rod being retrieved will not move. This will require reconfiguring the rod control system back to its' previous state prior to attempting the dropped rod recovery. K/A: 003AA2.01 (RO 3.7 / SRO 3.9)	S, M, A	1
b. Respond to Failure of PRZR Level Instrument (RO / SRO-I) A PRZR level instrument will fail low requiring entry into AOP-18001 Section D. After to candidate attempts to place letdown back in service, a letdown isolation valve will NOT open requiring Excess Letdown to be placed into service. K/A: 028AA1.05 (RO 3.7 / SRO 3.6)	S, D, A	2
c. Transfer ECCS Pumps to Hot Leg Recirculation. Multiple Train "A" Components Fail to Align (RO / SRO-I) During alignment of ECCS to Hot Leg Recirculation, multiple Train A components will fail to align requiring the use of the RNO column. K/A: 006A4.05 (RO 3.9 / SRO 3.8)	S, D, A, P EN, L	3
d. Respond To RHR Pump Trip in Mode 4 (RO / SRO-I) An RHR pump will trip in Mode 4 requiring entry into AOP-18019, Section A, Loss of RHR Capability in Mode 4. The flow path through the procedure will require the candidate to start an RCP. K/A: 025G2.4.9 (RO 3.8 / SRO 4.2)	S, N, A, L	4P
e. Dilute Containment with Service Air in accordance with 19010-C, E-1, Loss of Reactor or Secondary Coolant, Step 29. (RO / SRO-I) The student will be required to use SOP 13130-1, section 4.4.2 to align service air to containment to dilute the hydrogen. K/A: 028A4.01 (RO 4.0 / SRO 4.0)	S, D, L	5
f. N/A	N/A	N/A

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<p>g. Respond to Fuel Handling Building High Radiation (RO/SRO-I)</p> <p>High Radiation will occur due to dropped rod in FHB but auto actuation fails, manual system alignment is required.</p> <p>K/A: 061AA1.01 (RO 3.6 / SRO 3.6)</p>	S, D, A	7
<p>h. Transfer Steam Dumps to Steam Pressure Mode (RO / SRO-I)</p> <p>The student will be required to transfer steam dumps to the steam pressure mode using step 14 of AOP 18009-C. The steam dumps will not work, the student must shift the temperature control to the SG ARVs.</p> <p>K/A: 041A4.08 (RO 3.0 / SRO 3.1)</p>	S, N, A, L	4S

In-Plant Systems [@] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
<p>i. Bypass CNMT HI-1 Bistables Following Loss of Heat Sink</p> <p>Bistables must be bypassed using the BTI equipment in order to align a feedwater flow path to the SGs during a loss of secondary heat sink. This will also require knowledge of how / where to obtain multiple BTI keys to bypass 2 trains of equipment (RO / SRO-I)</p> <p>K/A: 012A4.03 (3.6 / 3.6)</p>	D, E, L, P	7
<p>j. Locally Start the TDAFW Pump</p> <p>Following a Control Room evacuation, the TDAFW pump is required to be locally started at Shutdown Panel C. Local transfer switches must be manipulated, the T & T valve checked for proper status, and throttling of AFW flow from the local panel is required using available flow indications.</p> <p>K/A: 068AA1.02 (RO 4.3 / SRO 4.5)</p>	D, E, L	8
<p>k. Locally Isolate RCP Seals / ACCW per 19100-C, Attachment E</p> <p>During a loss of All AC power, the RCP seals are required to be isolated. Included on Attachment E is opening the breakers to the SG ARVs in preparation for local operation.</p> <p>K/A: 055G2.4.34 (RO 4.2 / SRO 4.1)</p>	M, E, L, R	6
<p>@ All control room (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
(A)lternate path	4-6 / 4-6 / 2-3	
(C)ontrol room		
(D)irect from bank	$\leq 9 / \leq 8 / \leq 4$	
(E)mergency or abnormal in-plant	$\geq 1 / \geq 1 / \geq 1$	
(EN)gineered Safety Feature	- / - / > 1 (control room system)	
(L)ow-Power / Shutdown	$\geq 1 / \geq 1 / \geq 1$	
(N)ew or (M)odified from bank including 1(A)	$\geq 2 / \geq 2 / \geq 1$	
(P)revious 2 exams	$\leq 3 / \leq 3 / \leq 2$ (randomly selected)	
(R)CA	$\geq 1 / \geq 1 / \geq 1$	
(S)imulator		