

Facility: Watts Bar		Date of Exam: July 2015																	
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	N/A						3	3	N/A		3	18	3	3	6
	2	2	1	1	N/A						2	1	N/A		2	9	2	2	4
	Tier Totals	5	4	4	N/A						5	4	N/A		5	27	5	5	10
2. Plant Systems	1	3	3	1	2	3	2	3	3	2	3	3	28			3	2	5	
	2	1	1	1	0	1	1	1	1	1	1	1	10	2			1	3	
	Tier Totals	4	4	2	2	4	3	4	4	3	4	4	38				3	8	
3. Generic Knowledge and Abilities Categories					1		2		3		4		10		1	2	3	4	7
					2		2		3		3				1	2	2	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  $\pm 1$  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 section D.1.b of ES-401 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. Refer to section D.1.b of ES-401 for the applicable KAs.
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												
007EA1.01	Reactor Trip - Stabilization - Recovery / 1	3.7	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"/>	<input type="checkbox"/>	T/G controls
008AK2.02	Pressurizer Vapor Space Accident / 3	2.7	2.7	<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"/>	Sensors and detectors
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"/>	<input type="checkbox"/>	S/Gs
011EK1.01	Large Break LOCA / 3	4.1	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"/>	<input type="checkbox"/>	Natural circulation and cooling, including reflux boiling.
022AA1.02	Loss of Rx Coolant Makeup / 2	3	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"/>	<input type="checkbox"/>	CVCS charging low flow alarm, sensor and indicator
025AA2.06	Loss of RHR System / 4	3.2	3.4	<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"/>	Existence of proper RHR overpressure protection
027AG2.4.18	Pressurizer Pressure Control System Malfunction / 3	3.3	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the specific bases for EOPs.
029EG2.4.31	ATWS / 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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of annunciators alarms, indications or response procedures
038EA1.43	Steam Gen. Tube Rupture / 3	3.6	3.5	<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"/>	Manual isolation of steam dump valves
040AK3.01	Steam Line Rupture - Excessive Heat Transfer / 4	4.2	4.5	<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"/>	Operation of steam line isolation valves
054AA2.08	Loss of Main Feedwater / 4	2.9	3.3	<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"/>	Steam flow-feed trend recorder

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
055EK1.02	Station Blackout / 6	4.1	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"/>	<input type="checkbox"/>	Natural circulation cooling
056AG2.2.41	Loss of Off-site Power / 6	3.5	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to obtain and interpret station electrical and mechanical drawings.
057AK3.01	Loss of Vital AC Inst. Bus / 6	4.1	4.4	<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"/>	Actions contained in EOP for loss of vital ac electrical instrument bus
058AA2.03	Loss of DC Power / 6	3.5	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"/>	<input type="checkbox"/>	DC loads lost; impact on ability to operate and monitor plant systems
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"/>	<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.
WE05EK1.3	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.9	4.1	<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"/>	Annunciators and conditions indicating signals, and remedial actions associated with the (Loss of Secondary Heat Sink).
WE11EK3.4	Loss of Emergency Coolant Recirc. / 4	3.6	3.8	<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"/>	<input type="checkbox"/>	RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
005AA1.05	Inoperable/Stuck Control Rod / 1	3.4	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"/>	<input type="checkbox"/>	RPI
028AK3.03	Pressurizer Level Malfunction / 2	3.5	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"/>	<input type="checkbox"/>	False indication of PZR level when PORV or spray valve is open and RCS saturated
032AG2.4.11	Loss of Source Range NI / 7	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of abnormal condition procedures.
033AK1.01	Loss of Intermediate Range NI / 7	2.7	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"/>	<input type="checkbox"/>	Effects of voltage changes on performance
060AG2.4.4	Accidental Gaseous Radwaste Rel. / 9	4.5	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures
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"/>	<input type="checkbox"/>	Detectors at each ARM system location
067AA2.10	Plant Fire On-site / 8	2.9	3.6	<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"/>	Time limit of long-term-breathing air system for control room
WE08EK1.3	RCS Overcooling - PTS / 4	3.5	4.0	<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"/>	<input type="checkbox"/>	Annunciators and conditions indicating signals, and remedial actions associated with the (Natural Circulation Operations).
WE10EA1.3	Natural Circ. With Seam Void/ 4	3.4	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"/>	Desired operating results during abnormal and emergency situations.

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
003K5.02	Reactor Coolant Pump	2.8	3.2	<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"/>	Effects of RCP coastdown on RCS parameters
003K5.04	Reactor Coolant Pump	3.2	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"/>	<input type="checkbox"/>	Effects of RCP shutdown on secondary parameters, such as steam pressure, steam flow and feed flow
004K5.31	Chemical and Volume Control	3.0	3.4	<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"/>	Purpose of flow path around boric acid storage tank
005A1.02	Residual Heat Removal	3.3	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"/>	<input type="checkbox"/>	RHR flow rate
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"/>	<input type="checkbox"/>	RCS pressure boundary motor-operated valves
006A3.08	Emergency Core Cooling	4.2	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Automatic transfer of ECCS flowpaths
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"/>	<input type="checkbox"/>	Quench tank cooling
008A2.05	Component Cooling Water	3.3	3.5	<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"/>	Effect of loss of instrument and control air on the position of the CCW valves that are air operated
008G2.4.11	Component Cooling Water	3.8	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of abnormal condition procedures
010K2.01	Pressurizer Pressure Control	3.0	3.4	<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"/>	PZR heaters
012A1.01	Reactor Protection	2.9	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"/>	<input type="checkbox"/>	Trip setpoint adjustment

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
012K2.01	Reactor Protection	3.3	3.7	<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"/>	RPS channels, components and interconnections
013K6.01	Engineered Safety Features Actuation	2.7	3.1	<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"/>	Sensors and detectors
022A1.02	Containment Cooling	3.6	3.8	<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"/>	Containment pressure
026A4.01	Containment Spray	4.5	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 checked="" type="checkbox"/>	<input type="checkbox"/>	CSS controls
039A3.02	Main and Reheat Steam	3.1	3.5	<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"/>	Isolation of the MRSS
059G2.2.42	Main Feedwater	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
061K6.01	Auxiliary/Emergency Feedwater	2.5	2.8	<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"/>	Controllers and positioners
062G2.4.46	AC Electrical Distribution	4.2	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 verify that the alarms are consistent with the plant conditions.
062K1.02	AC Electrical Distribution	4.1	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"/>	ED/G
063K1.03	DC Electrical Distribution	2.9	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"/>	Battery charger and battery
064A4.06	Emergency Diesel Generator	3.9	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 checked="" type="checkbox"/>	<input type="checkbox"/>	Manual start, loading and stopping of the ED/G

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
064A4.09	Emergency Diesel Generator	3.2	3.3	<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 checked="" type="checkbox"/>	<input type="checkbox"/>		Establishing power from the ring bus (to relieve ED/G)
073A2.01	Process Radiation Monitoring	2.5	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"/>		Erratic or failed power supply
076K3.01	Service Water	3.4	3.6	<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"/>		Closed cooling water
078K1.05	Instrument Air	3.4	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"/>		MSIV air
078K4.02	Instrument Air	3.2	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"/>		Cross-over to other air systems
103A2.04	Containment	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"/>		Containment evacuation (including recognition of the alarm)

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
002K5.05	Reactor Coolant	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"/>	Reason for drain tank pressure rise during water inventory operations
011K2.02	Pressurizer Level Control	3.1	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"/>	<input type="checkbox"/>	PZR heaters
014K1.02	Rod Position Indication	3.0	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"/>	<input type="checkbox"/>	NIS
017K6.01	In-core Temperature Monitor	2.7	3.0	<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"/>	Sensors and detectors
029A3.01	Containment Purge	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CPS isolation
033A1.01	Spent Fuel Pool Cooling	2.7	3.3	<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"/>	<input type="checkbox"/>	Spent fuel pool water level
034A2.03	Fuel Handling Equipment	3.3	4.0	<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"/>	Mispositioned fuel element
035A4.06	Steam Generator	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"/>	<input type="checkbox"/>	S/G isolation on steam leak or tube rupture/leak
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"/>	<input type="checkbox"/>	Main condenser
079G2.4.35	Station Air	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of local auxiliary operator tasks during an 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												
G2.1.18	Conduct of operations	3.6	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to make accurate, clear and concise logs, records, status boards and reports.
G2.1.25	Conduct of operations	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to interpret reference materials, such as graphs, curves, tables, etc.
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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of surveillance procedures
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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to determine Technical Specification Mode of Operation
G2.3.14	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities
G2.3.15	Radiation Control	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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation monitoring systems
G2.3.4	Radiation Control	3.2	3.7	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation exposure limits under normal and emergency conditions
G2.4.1	Emergency Procedures/Plans	4.6	4.8	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of EOP entry conditions and immediate action steps
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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of "fire in the plant" procedures.
G2.4.50	Emergency Procedures/Plans	4.2	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
015AG2.2.44	RCP Malfunctions / 4	4.2	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions
029EA2.01	ATWS / 1	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor nuclear instrumentation
038EG2.4.31	Steam Gen. Tube Rupture / 3	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of annunciator alarms, indications, or response procedures
058AG2.4.47	Loss of DC Power / 6	4.2	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material
077AA2.07	Generator Voltage and Electric Grid Disturbances / 6	3.6	4.0	<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"/>	Operational status of engineered safety features
WE11EA2.2	Loss of Emergency Coolant Recirc. / 4	3.4	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"/>	Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
005AG2.4.8	Inoperable/Stuck Control Rod / 1	3.8	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 how abnormal operating procedures are used in conjunction with EOPs.
024AA2.04	Emergency Boration / 1	3.4	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"/>	Availability of BWST
032AA2.06	Loss of Source Range NI / 7	3.9	4.1	<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"/>	Confirmation of reactor trip
we13EG2.4.20	Steam Generator Over-pressure / 4	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 the operational implications of EOP warnings, cautions, and notes.

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO	<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"/>	
012G2.2.36	Reactor Protection	3.1	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
013A2.04	Engineered Safety Features Actuation	3.6	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"/>	Loss of instrument bus
061G2.2.22	Auxiliary/Emergency Feedwater	4.0	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of limiting conditions for operations and safety limits.
076A2.01	Service Water	3.5	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"/>	Loss of SWS
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"/>	<input type="checkbox"/>	Failure of ESF

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
017A2.02	In-core Temperature Monitor	3.6	4.1	<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"/>	Core damage
029A2.01	Containment Purge	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"/>	Maintenance or other activity taking place inside containment
075G2.1.20	Circulating Water	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 interpret and execute procedure steps.

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
G2.1.34	Conduct of operations	2.7	3.5	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of primary and secondary chemistry limits
G2.2.21	Equipment Control	2.9	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of pre- and post-maintenance operability requirements.
G2.2.6	Equipment Control	3.0	3.6	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the process for making changes to procedures
G2.3.12	Radiation Control	3.2	3.7	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiological safety principles pertaining to licensed operator duties
G2.3.14	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities
G2.4.23	Emergency Procedures/Plans	3.4	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the bases for prioritizing emergency procedure implementation during emergency operations.
G2.4.44	Emergency Procedures/Plans	2.4	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of emergency plan protective action recommendations.

Facility: <b>Watts Bar</b>		Date of Examination: <b>7/20/2015</b>
Examination Level: RO <input checked="" type="checkbox"/> SRO <input type="checkbox"/>		Operating Test Number: <b>301</b>
Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M,R	<b>Determine License Status Active / Inactive</b> <i>2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc. 3.3/3.8 CFR 41.10 / 43.2</i>
Conduct of Operations	M,R	<b>Perform RCS Deboration Calculation.</b> <i>2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc. 3.9 / 4.2 CFR 41.10 / 43.5 / 45.12</i>
Equipment Control	M,R	<b>Perform QPTR Calculation and Evaluate Results for Tech Spec compliance.</b> <i>2.2.12 Knowledge of surveillance procedures. 3.7/4.1 CFR 41.10/45.13</i>
Radiation Control	M,R	<b>Calculate the maximum permissible stay time within emergency dose limits.</b> <i>2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions. 3.2/3.7 CFR 41.12 / 43.4 / 45.10</i>
Emergency Procedures / Plan	N/A	N/A
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)		

## RO Admin JPM Summary

**1 Task/KA/Safety Function:**

DETERMINE LICENSE STATUS ACTIVE OR INACTIVE / 2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc. (3.3/3.8) (CFR 41.10/43.2)/ Safety Function 2.1.

**Task Standard:**

Applicant reviews data provided and determines:

1. RO A is INACTIVE.
2. RO B is ACTIVE.
3. RO C is ACTIVE.

**Critical Steps:**

The applicant determines the license status of RO A is INACTIVE since the RO DID NOT work the required qualified 5 twelve hour shifts in a license position during the previous quarter.

The applicant determines the license status of RO B is ACTIVE since the RO license was issued in the current quarter and is not required to stand 5 12-hour shifts until the next quarter.

The applicant determines the license status of RO C is ACTIVE since the RO DID work the required qualified 5 twelve hour shifts in a license position during the previous quarter.

**The applicant will perform actions of the following procedures:**

OPDP-10, License Status Maintenance, Reactivation and Proficiency for Non-Licensed Positions, Rev. 8.

**2. Task/KA/Safety Function:**

PERFORM RCS DEBORATION CALCULATION / 2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc. (3.9/4.2) (CFR 41.10/45.13) / Safety Function 2.1

**Task Standard:**

Applicant calculates it will take 96 minutes (acceptable range 92 to 100 minutes) to reduce RCS boron concentration from 40 ppm to 35 ppm after based on 1-SOI-62.04, CVCS Purification System, Appendix B, RCS Deboronation Calculation and TI-59, "Boron Tables."

**Critical Steps:**

Applicant locates TI-59, and selects Appendix K, and records 86212.4 as the RCS volume

Applicant enters letdown flow of 120 gpm, since the INITIAL CONDITIONS requires letdown flow to be at maximum, and RCS volume of 86212.4 gallons. Applicant calculates time of 96 minutes (**Acceptable Range 92 to 100 minutes.**)

**The applicant will perform actions of the following procedures:**

1-SOI-62.04, CVCS Purification System, Appendix B, RCS Deboronation Calculation Rev. 1.

**3 Task/KA/Safety Function:**

CALCULATE QPTR AND EVALUATE RESULTS TO DETERMINE IF ACCEPTANCE CRITERIA ARE MET / 2.2.12 Knowledge of surveillance procedures (3.7/4.1) (CFR: 41.10 / 45.13)/ Safety Function 2,2

**Task Standard:**

The applicant:

1. Calculates Quadrant Power Tilt Ratio using 1-SI-0-21, Excore QPTR & Axial Flux Difference, Attachment 1, QPTR Determination Using Detector Currents.
2. Evaluates results and concludes that the acceptance criterion for 1-SI-0-21, Shutdown Margin, Section 6.2, Conservative SDM Hand Calculation is **NOT** MET.

**Critical Steps:**

Applicant obtains the detector current values from NOB Sheets A-2 for the respective NIS Power Range Detectors and records them in appropriate blocks on Attachment 1 Step 4.

Applicant calculates the calibrated output voltages [**Step 3**] by multiplying the respective detector's current reading by resistance values [**Step 4**] and records the results in appropriate blocks on Attachment 1 Step 5.

Applicant calculates the average output voltages for the upper detector by adding the respective upper detector's calibrated output voltage readings [**from Step 5**] and dividing the result by the number of channels in service. This process is repeated for the lower detector using the lower detector calibrated voltages. The results recorded in appropriate blocks on Attachment 1, Step 6.

Applicant calculates QPTR values by dividing the respective Calibrated Output Voltage [**Step 5**] by the Average Calibrated Output Voltage for each NIS channel detector [**Step 6**]. The results recorded in appropriate blocks on Attachment 1.

Applicant informs the Unit Supervisor of the completion of Attachment 1 and Section 6.1 of 1-SI-0-21 and reports that acceptance criteria have NOT BEEN SATISFIED.

**The applicant will perform actions of the following procedures:**

1-SI-0-21, Excore QPTR & Axial Flux Difference, Rev. 19;

Nuclear Operating Book (NOB). A-2 Sheet 1 Rev. 129, Sheet 2 Rev. 128, Sheet 3 Rev. 129, Sheet 4 Rev 127.

**4. Task/KA/Safety Function:**

CALCULATE THE MAXIMUM PERMISSIBLE STAY TIME WITHIN EMERGENCY DOSE LIMITS / 2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions (3.2/3.7) (CFR 41.12 / 43.4 / 45.10)/ Safety Function 2.3

**Task Standard:**

The applicant:

1. Calculates the dose expected for Task #1 through Task #3.
2. Determines that Tasks #1 through #4 can be performed without exceeding equipment protection emergency dose limits.
3. Calculates the maximum allowable stay time for Task #4 to be 18 minutes.

**Critical Steps:**

Applicant determines the following:

EXPECTED DOSE for **TASK # 1**

(10 minutes/60 minutes/hour) x 3 R/hr = **0.5 R**

EXPECTED DOSE for **TASK #2**

(20 minutes/60 minutes/hr) x 18 R/hr = **6.0 R**

EXPECTED DOSE for **TASK #3**

(40 minutes/60 minutes/hr) x 3 R/hr = **2.0 R**

TOTAL EXPECTED DOSE for TASKS #1, #2 and #3 is 8.5 R.

Applicant circles YES on the APPLICANT CUE SHEET.

Applicant enters 18 minutes for permitted stay time for Task #4.

**The applicant will perform actions of the following procedures:**

EPIP-15, Emergency Exposure Guidelines," Rev. 15.

**5 Not Applicable**

Facility: <b>Watts Bar</b>		Date of Examination: <b>7/20/2015</b>
Examination Level: RO <input type="checkbox"/> SRO <input checked="" type="checkbox"/>		Operating Test Number: <b>301</b>
Administrative Topic (See Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M,R	<b>Determine License Status Active / Inactive</b> <i>2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.</i> 3.3/3.8 CFR 41.10 / 43.2
Conduct of Operations	M,R	<b>Perform RCS Deboration Calculation.</b> <i>2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc.</i> 3.9 / 4.2 CFR 41.10 / 43.5 / 45.12
Equipment Control	N,R	<b>Evaluate conditions and determine Tech Spec Entry requirements.</b> <i>2.2.37 Ability to determine operability and/or availability of safety related equipment</i> 3.6/4.6 CFR: 41.10 / 43.2 / 45.13
Radiation Control	M,R	<b>Calculate the maximum permissible stay time within emergency dose limits.</b> <i>2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions.</i> 3.2/3.7 CFR 41.12 / 43.4 / 45.10
Emergency Procedures / Plan	D,R	<b>Classify event as Site Area Emergency.</b> <i>2.4.41 Knowledge of the emergency action level thresholds and classifications.</i> 2.9/4.6 CFR 41.10 / 43.5 / 45.11
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: <ul style="list-style-type: none"> <li>(C)ontrol room, (S)imulator, or Class(R)oom</li> <li>(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs &amp; RO retakes)</li> <li>(N)ew or (M)odified from bank (≥ 1)</li> <li>(P)revious 2 exams (≤ 1; randomly selected)</li> </ul>		

## SRO Admin JPM Summary

**1. Task/KA/Safety Function:**

DETERMINE LICENSE STATUS ACTIVE OR INACTIVE / 2.1.4 Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, “no-solo” operation, maintenance of active license status, 10CFR55, etc. (3.3/3.8) (CFR 41.10/43.2)/ Safety Function 2.1

**Task Standard:**

Applicant reviews data provided and determines:

1. RO A is INACTIVE
2. RO B is ACTIVE
3. SRO C is ACTIVE

**Critical Steps:**

The applicant determines RO A’s license is INACTIVE because the operator DID NOT work the required qualified 5 twelve hour shifts in a license position during the previous quarter.

The applicant determines RO B’s license is ACTIVE because *“When a licensee is issued a new NRC License number, the licensee is immediately active.*

The applicant determines SRO C’s license is ACTIVE because *“to maintain an active status, the licensee shall actively perform the functions of an operator or senior operator for a minimum of seven 8 hour shifts a calendar quarter or five 12 hour shifts a calendar quarter in a position credited for watch-standing proficiency. To maintain the supervisory portion of a SRO license active, a SRO must stand at least one complete watch (8 or 12 hour shift) per calendar quarter in a shift crew position credited for SRO-only supervisory licensed duties. It is the licensee’s responsibility to maintain cognizance of his/her license status. The remainder of complete watches (to meet the required minimum of seven 8-hour or five 12 hour shifts per calendar quarter) may be performed in either a credited SRO or RO position.”*

**The applicant will perform actions of the following procedures:**

OPDP-10, License Status Maintenance, Reactivation and Proficiency for Non-Licensed Positions , Rev. 8.

**2. Task/KA/Safety Function:**

PERFORM RCS DEBORATION CALCULATION / 2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc. (3.9/4.2) (CFR 41.10/45.13) / Safety Function 2.1

**Task Standard:**

Applicant calculates it will take 96 minutes (acceptable range 92 to 100 minutes) to reduce RCS boron concentration from 40 ppm to 35 ppm after based on 1-SOI-62.04, CVCS Purification System, Appendix B, RCS Deboronation Calculation and TI-59, "Boron Tables."

**Critical Steps:**

Applicant locates TI-59, and selects Appendix K, and records 86212.4 as the RCS volume

Applicant enters letdown flow of 120 gpm, since the INITIAL CONDITIONS requires letdown flow to be at maximum, and RCS volume of 86212.4 gallons. Applicant calculates time of 96 minutes (**Acceptable Range 92 to 100 minutes.**)

**The applicant will perform actions of the following procedures:**

1-SOI-62.04, CVCS Purification System, Appendix B, RCS Deboronation Calculation Rev. 1.

**3. Task/KA/Safety Function:**

EVALUATE CONDITIONS AND APPLY TECHNICAL SPECIFICATIONS / 2.2.37  
Ability to determine operability and/or availability of safety related equipment.  
(3.6/4.6)(CFR 41.10 / 43.2 / 45.13) / Safety Function 2.2

**Task Standard:**

**PART 1:**

The applicant determines that entry into LCO 3.7.5, Auxiliary Feedwater (AFW) System, Condition B is required, and TD AFW pump must be returned to OPERABLE status within 72 hours.

**PART 2**

The applicant determines equipment which needs to be protected using 1-PI-OPS-1-PE, Protected Equipment, Rev 15 Page 32 of 68 Table TD AFWP.

**Critical Steps:**

Applicant determines that 1-FCV-1-15, SG 1 STEAM SUPPLY TO T-D AFW PMP and 1-FCV-1-16, SG 4 STEAM SUPPLY TO T-D AFW PMP remain OPERABLE.

Applicant determines that the isolation of the leak downstream of 1-FCV-1-17, MAIN STEAM AUX FWP HDR SUPPLY ISOL renders the TD AFW pump INOPERABLE, requiring entry into Condition B.

Applicant determines the following equipment is required to be protected:

1-HS-3-118A, AFW PMP A-A;1-HS-2-128A,AFW PMP B-B;MDAFW PUMP 1A;MD AFW PUMP 1B;1-BKR-3-118 AFW PUMP 1A-A;1-BKR-3-128 AFW PUMP 1B-B;1A EDG;1B EDG;480V Diesel Aux Bd 1A1-A;480V Diesel Aux Bd 1A2-A;480V Diesel Aux Bd 1B1-B;480V Diesel Aux Bd 1B2-B.

**The applicant will perform actions of the following procedures:**

WBN Technical Specifications, Amendment 98.

1-PI-OPS-1-PE, Protected Equipment, Rev 15.

**4. Task/KA/Safety Function:**

CALCULATE THE MAXIMUM PERMISSIBLE STAY TIME WITHIN EMERGENCY DOSE LIMITS / 2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions (3.2/3.7) (CFR 41.12 / 43.4 / 45.10)/ Safety Function 2.3

**Task Standard:**

The applicant:

1. Calculates the dose expected for Task #1 through Task #3.
2. Determines that Tasks #1 through #4 can be performed without exceeding equipment protection emergency dose limits.
3. Calculates the maximum allowable stay time for Task #4 to be 18 minutes.

**Critical Steps:**

Applicant determines the following:

EXPECTED DOSE for **TASK # 1**

(10 minutes/60 minutes/hour) x 3 R/hr = **0.5 R**

EXPECTED DOSE for **TASK #2**

(20 minutes/60 minutes/hr) x 18 R/hr = **6.0 R**

EXPECTED DOSE for **TASK #3**

(40 minutes/60 minutes/hr) x 3 R/hr = **2.0 R**

TOTAL EXPECTED DOSE for TASKS #1, #2 and #3 is 8.5 R.

Applicant circles YES on the APPLICANT CUE SHEET.

Applicant enters 18 minutes for permitted stay time for Task #4.

**The applicant will perform actions of the following procedures:**

EPIP-15, Emergency Exposure Guidelines," Rev. 16.

**5. Task/KA/Safety Function:**

Classify the Event, per the REP / 2.4.41 Knowledge of the emergency action level thresholds and classifications (2.9/4.6) (CFR 41.10 / 43.5 / 45.11) / Safety Function 2.4

**Task Standard:**

The applicant:

1. Classifies the event as a SITE AREA EMERGENCY within 15 minutes of the Start Time.
2. EPIP-4, Site Area Emergency, Appendix A, TVA Initial Notification Form For Site Area Emergency, is marked correctly, per the supplied KEY

**Critical Steps:**

Applicant refers to EPIP-1, Emergency Plan Classification Logic, and determines that conditions require the declaration of a SITE AREA EMERGENCY, based on EAL 7.1, GASEOUS EFFLUENT.

Applicant completes EPIP-4, Site Area Emergency, Appendix A, Site Area Emergency Initial Notification Form, within 15 minutes of initial event classification.

**The applicant will perform actions of the following procedures:**

EPIP-1, Emergency Plan Classification Flowpath.

EPIP-4, Site Area Emergency.

Facility: Watts Bar Date of Examination: 7/20/2015  
 Exam Level: RO  SRO-I  SRO-U  Operating Test No.: 301

Control Room Systems: \* 8 for RO; 7 for SRO-I; 2 or 3 for SRO-U

System / JPM Title	Type Code*	Safety Function
a. Retrieve a Dropped Rod. 001 A2.03, 3.5/4.2 CFR 41.7 / 45.5 to 45.8	A, M	1
b. Perform 1-SOI-63.01, Safety Injection System, Section 8.3.1, Add Water to CLA 1. 006 A4.07, 4.4/4.4 CFR 41.7/45.5 to 45.8	D, L	2
c. Isolate Cold Leg Accumulators per 1-E-1, Loss of Reactor or Secondary Coolant. 011 EA1.09, 4.3/4.3,	A,EN,D	3
d. Start #2 RCP per 1-SOI-68.02, Reactor Coolant Pumps. 003 A1.02, 2.9/2.9 CFR 41.5/45.5, CFR 41.7 / 45.5 / 45.6	A,M,L	4P
e. Shutdown 1B MFP using 1-SOI-2&3.01, Condensate and Feedwater Systems. 059 A4.03 2.9/2.9 CFR 41.7/45.5 to 45.8	N	4S
f. Align RHR Spray per 1-FR-Z.1, High Containment Pressure. E14 EA1.1, 3.7 / 3.7 CFR 41.7 / 45.5 / 45.6	A, D	5
g. Synchronize 1A-A DG from the Main Control Room per SOI-82.01, Diesel Generator (DG) 1A-A. 064 A1.03, 3.9/3.9 CFR 41.7/45.5 to 45.8	A,EN,D	6
h. Start up Instrument Room Purge per SOI-30.02, Containment Purge System. 029 A2.03, 2.7/3.1 CFR 41.5/43.5/45.3/45.13 CFR	D	8

In-Plant Systems\* (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)

i Perform 1-SOI-62.01, 1-SOI-62.01, CVCS – Charging and Letdown, Section 8.9, Seal Injection Filter Swap. 003 A4.01 3.3/3.2 CFR 41.7/45.5 to 45.8	D,R	4P
j. Perform 2-ES-1.1, SI Termination, Appendix E actions to support SI Termination. E02 EA1.1, 4.0/3.9 CFR 41.7/45.5/45.6	E, EN,N	3
k. Perform 1-AOI-15, Loss of Component Cooling Water (CCS), Attachment 1, Alignment of ERCW to CCP 1A-A Lube Oil Coolers. 008 1.02, 3.3/3.4 CFR 41.2 to 41.9/45.7 to 45.9	E,M,R	8

\* All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all five SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* 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	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(EN)gineered safety feature	≥ 1 / ≥ 1 / ≥ 1 (control room system)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

**Reactor Operator Summary****A. Task/KA/Safety Function:**

RETRIEVE A DROPPED ROD / 001 Control Rod Drive System (A2.03) (3.5/4.2)/  
Safety Function 1

**Task Standard:**

The applicant:

- 1) Performs actions of AOI-2, Malfunction of Reactor Control System, Section 3.3, Dropped RCCA, to withdraw Shutdown Bank D rod C-5.
- 2) Diagnose that Shutdown Bank D has dropped, and performs IMMEDIATE ACTIONS by manually tripping the reactor.

**Critical Steps:**

Applicant rotates 1-RBSS, ROD BANK SELECT to the left from the MAN position to the SDD position to select shutdown bank D.

Applicant places toggle switches for rods E-13, N-11, & L-3 in the disconnect position (up position) in cabinet 1-XS-85-1.

Upon recognition of Shutdown Bank D rods dropping, C-5 rod drop, applicant places the Reactor Trip hand switch on 1-M-4 or 1-M-6 to the TRIP position.

**Alternate Path:**

When Shutdown Bank D is withdrawn to greater than or equal to 32 steps, C-5 rod will drop into the core. Applicant will manually trip the reactor in accordance with 1-AOI-2, Malfunction of Reactor Control System, Section 3.3, Dropped RCCS, Step 2 RNO.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**The applicant will perform actions of the following procedures:**

1-AOI-2, Malfunction of Reactor Control System, Section 3.3, Dropped RCCA, Rev. 2

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**B. Task/KA/Safety Function:**

FILL COLD LEG ACCUMULATOR #1/ (006 A4.07) (4.4/4.4) Safety Function 2

**Task Standard:**

Applicant adds water to the cold leg accumulator using 1A-A Safety Injection pump, in accordance with SOI-63.01, Safety Injection System, Section 8.3.1, Add Water to CLA 1, until 131-A, CL ACCUM 4 LEVEL HI/LO is DARK.

**Critical Steps:**

To fill CLA #1, the applicant:

Closes 1-FCV-63-152, SI PMP A TO CL 1-2-3-4.

Opens 1-HS-30-187, TEST LINE ISOL, 1-HS-63-71A, CKV TEST LINE TO HUT, and 1-HS-63-23A, CLA FILL FROM SI PMPS.

Starts 1A-A SI pump.

Opens 1-HS-63-115A, MAKEUP TO CL ACCUM 1

When level has been restored, the applicant:

Closes 1-HS-63-115A, MAKEUP TO CL ACCUM 1, 1-HS-30-187, TEST LINE ISOL, 1-HS-63-71A, CKV TEST LINE TO HUT, and 1-HS-63-23A, CLA FILL FROM SI PMPS.

Upon receiving the cue that 20 minutes have elapsed, stops the 1A-A SI Pump.

Opens 1-FCV-63-152, SI PMP A TO CL 1-2-3-4.

**Alternate Path:**

Not Applicable.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable.

**The applicant will perform actions of the following procedures:**

1-SOI-63.01, Safety Injection System, Section 8.3.1, Add Water to CLA.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**C. Task/KA/Safety Function**

ISOLATE COLD LEG ACCUMULATORS PER E-1, LOSS OF REACTOR OR SECONDARY COOLANT / 011 Emergency Core Cooling System 011 EA1.09/ Safety Function 3

**Task Standard:**

The applicant:

- 1.) Isolates Cold Leg Accumulators 1 and 3 per E-1 Step 25 AER.
- 2.) Vents Cold Leg Accumulators 2 and 4 per E-1, Step 25 RNO.

**List of Critical Steps**

Locates and places 1-FCV-63-118, CLA 1 Isolation valve in CLOSE.

Locates and places 1-FCV-63-80, CLA 3 Isolation valve in CLOSED.

Determines 1-FCV-63-98, CLA 2 and 1-FCV-63-67 CLA 4 Isolation valves will not close.

RESETS Phase B isolation.

OPENS Containment air supply valves 1-FCV-32-80, 1-FCV-32-102, and 1-FCV-32-110.

OPENS 1-FVCV-63-107, ACCUMULATOR 2 N2 MAKEUP VALVE.

OPENS 1-FCV-63-63, ACCUMULATOR 4 N2 MAKEUP VALVE.

OPENS 1-FCV-63-65, Vent Header Isolation.

**List of Steps that Constitute an Alternate Path**

Power is lost to RX MOV BD 1B1-B, which prevents closure of 1-FCV-63-98, CLA 2 Isolation valve, and 1-FCV-63-80, CLA 4 Isolation Valve. This requires entry into and performance of Step 25 RESPONSE NOT OBTAINED actions.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

1-E-1. Loss of Reactor or Secondary Coolant.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Task is performed to limit N2 injection into the RCS which could interfere with long term core cooling.

**D. Task/KA/Safety Function:**

START REACTOR COOLANT PUMP #2 / 003 Reactor Coolant Pump (003 A4.02)  
(2.9/2.9) / Safety Function 4P

**Task Standard:**

The applicant :

- 1.) Performs actions of SOI-68.02, Reactor Coolant Pumps, to start RCP #2.
- 2.) Evaluates #2 RCP motor amps, determines that amps are not returning to below RED line and stops RCP #2.

**List of Critical Steps:**

START RCP #2 Oil Lift Pump

CLOSE PZR SPRAY, 1-PCV-68-340B.

START RCP #2.

STOP RCP #2 Oil Lift Pump

STOP and LOCK OUT #2 RCP upon determination of motor amps above RED line.

**Alternate Path:**

After #2 RCP Oil Lift Pump is stopped per SOI-68.02, motor amps will rise above the RED line, requiring the RCP to be stopped.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different:**

Not Applicable.

**Procedure Name/Number and Section pertaining to the task:**

SOI-68.02, Reactor Coolant Pumps, Section 5.0, Startup.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**E. Task/KA/Safety Function**

SHUTDOWN 1B MFP USING 1-SOI-2&3.01, CONDENSATE AND FEEDWATER SYSTEMS / 059 A1.07 (2.5/2.6) / Safety Function 4S

**Task Standard:**

The applicant performs 1-SOI-2&3.01, Condensate and Feedwater System, Section 7.3.1, TDMFP Shutdown, Steps 4 through 15 to remove the 1B MFP from service.

**List of Critical Steps**

**PLACE** 1-SIC-46-20B, MFPT B- SPEED CONTROL in MANUAL, and **LOWER** speed slowly.

**WHEN** MFP turbine speed is approx 3300 rpm, **THEN TRIP** the 1B MFP Turbine (using 1-HS-46-36A, MFPT B TRIP-RESET).

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different:**

Not Applicable.

**Procedure Name/Number and Section pertaining to the task:**

1-SOI-2&3.01, Condensate and Feedwater System, Section 7.3.1, TDMFP Shutdown, Rev 0008.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**F. Task/KA/Safety Function**

PLACE RHR SPRAY IN SERVICE PER 1-FR-Z.1, HIGH CONTAINMENT PRESSURE / E14 High Containment Pressure / EA1.1(3.7/3.7) (41.7/45.5/45.6)

**Task Standard:**

The applicant:

1. Performs actions to place Train B RHR Spray in service.
2. Determines 1-HS-72-41 has failed and will not open.
3. Enters 10.b RNO, and places Train A RHR Spray in service.

**List of Critical Steps**

IF RHR aligned for cold leg recirculation, THEN ENSURE 1-FCV-63-94 OPEN.

CLOSE RHR injection 1-FCV-63-93.

OPEN RHR spray 1-FCV-72-40.

**List of Steps that Constitute an Alternate Path**

During performance of 1-FR-Z.1, Step 10, 1-HS-72-41 fails to open. Requires performance of Step 10.b RNO to place Train A RHR spray in service.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

1-FR-Z.1, High Containment Pressure, Step 10.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Task is associated with maintenance of the containment barrier to fission product release.

**G. Task/KA/Safety Function**

SYNCHRONIZE DG 1A-A FROM THE MCR / 064 Emergency Diesel Generators (A4.01) (4.0/4.3) / Safety Function 6

**Task Standard:**

The applicant:

- 1.) Synchronizes 1A-A Diesel Generator to the shutdown board from the MCR, per SOI-82.01 Section 8.1.4, and then loads the DG to 3.5 to 4 MW and 0.75-1.25 MVARs.
- 2.) Determines that an emergency stop of the diesel generator is required upon receipt of annunciator 196-D, CRANKCASE PRESSURE HI and emergency stops the 1A-A Diesel Generator.

**List of Critical Steps**

PLACE 1-HS-82-18, DG MODE SELECTOR Switch, in PARALLEL [0-M-26].

PLACE 1-HS-57-47, DG SYNC SWITCH, in SYN [0-M-26].

WHEN TRAIN 1A-A SYNCHROSCOPE (1-XI-82-1) reaches 12 o'clock, THEN TURN 1-HS-57-46A, 1912 - DG TO SD BD 1A-A, to CLOSE.

LOAD DG promptly using 1-HS-82-13, SPEED CONTROL to at least 1.1 Megawatts as indicated on 1-EI-82-10A, DG MEGAWATTS (0-M-26).

MAINTAIN DG MEGAVARS 0.75 to 1.25 OUTGOING on 1-EI-82-11A, with 1-HS-82-12, VOLTAGE REGULATOR.

WHEN Window 196-D, CRANKCASE PRESSURE HI alarm is received, then DEPRESS 1-HS-82-17A, EMERGENCY STOP pushbutton on 0-M-26.

**List of Steps that Constitute an Alternate Path**

When annunciator 196-D, CRANKCASE PRESSURE HI is received, the applicant depresses emergency stop pushbutton on the 1A-A Diesel Generator panel 0-M-26.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

SOI-82.01, Diesel Generator (DG) 1B-B, Section 8.1.4, Manual-Remote Synchronizing DG.

ARI-195-201, 196-D, CRANKCASE PRESSURE HI.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable

**H. Task/KA/Safety Function**

START UP INSTRUMENT ROOM CONTAINMENT PURGE / 029 Containment Purge System (A2.03) (2.7/3.2)/Safety Function 8

**Task Standard:**

The applicant places Instrument Room Purge in service using SOI-30.02, Containment Purge System, Section 5.4, Start Up Instrument Room Purge, steps 6 through Step 11.

**List of Critical Steps**

CLOSE Containment vent filter flowpath.

OPEN 1-HS-30-2, PURGE SUP FAN DISCH.

OPEN 1-HS-30-213, PURGE EXH FAN 1A TO SHIELD BDL VNT.

OPEN 1-HS-30-7, UPR CNTMT PURGE 1-FCV-30-7 & 51.

OPEN 1-HS-30-8, UPR CNTMT PURGE 1-FCV-30-8 & 50.

Place 1-HS-30-1A, CNTMT PURGE SUP & EXH FANS 1A AND FCO-30-1A & 1B in START.

OPEN 1-HS-30-61A, PURGE EXH FAN A SUCT.

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

SOI-30.02, Containment Purge System, Section 5.1, Start Up Upper Containment Purge.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable

**I. Task/KA/Safety Function**

SWAP SEAL INJECTION FILTERS / 003 Reactor Coolant Pumps (A4.01) (3.3/3.2) / Safety Function 4P

**Task Standard:**

Seal Injection Filters have been swapped with A in service and B out of service in accordance with SOI-62.01, CVCS-Charging and Letdown, Section 8.9.2, Replacing Filter B with Filter A.

**List of Critical Steps**

SLOWLY OPEN 1-ISV-62-548, CVCS SEAL WTR INJ FLTR A IN ISOL.

SLOWLY OPEN 1-ISV-62-550, CVCS SEAL WTR INJ FILTER A OUT ISOL.

CLOSE 1-ISV-62-549, CVCS SEAL WTR INJ FILTER B OUT ISOL.

CLOSE 1-ISV-62-547, CVCS SEAL WTR INJ FLTR B IN ISOL.

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

SOI-62.01, CVCS-Charging and Letdown, Section 8.9.2, Replacing Filter B with Filter A.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable

**J. Task/KA/Safety Function**

PERFORM 2-ES-1.1, SI TERMINATION, APPENDIX E, OPERATION OF MOV'S AT TRAIN A ELECTRICAL BOARDS / E02 EA1.1, 4.0/3.9 CFR 41.7/45.5/45.6/  
Safety Function 3

**Task Standard:**

Applicant performs 2-ES-1.1, SI Termination, Appendix E, Operation of MOV's at Train A Electrical Boards, and describes local manipulations associated with 2-FCV-63-26, 2-FCV-62-132, AND 2-FCV-62-135.

**List of Critical Steps**

PLACE 2-XS-63-26-A to AUX position.  
PLACE 2-HS-63-26C to CLOSE position.  
PLACE 2-XS-62-132-A to AUX position.  
PLACE 2-HS-62-132C to OPEN position.  
PLACE 1-XS-62-135-A to AUX position.  
PLACE 1-HS-62-135C to CLOSE position.

**List of Steps that Constitute an Alternate Path**

Not Applicable.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

2-ES-1.1, SI TERMINATION, DRAFT, Appendix E, Operation of MOVs at Train A Electrical Boards.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Task is associated with maintenance of the reactor coolant system barrier.

**K. Task/KA/Safety Function**

PERFORM 1-AOI-15, LOSS OF COMPONENT COOLING WATER (CCS),  
ATTACHMENT 1/ 008 Component Cooling Water (A2.02) (3.2/3.5) / Safety Function  
8

**Task Standard:**

The applicant performs actions of 1-AOI-15, Loss of Component Cooling (CCS),  
Attachment 1, Alignment of ERCW to CCP 1A-A Lube Oil Coolers.

**List of Critical Steps**

CLOSE 1-ISV-67-602A, CVCS CCP ROOM CLR 1A-A ERCW RET ISOL.

CLOSE 1-ISV-70-553A, CCP 1A-A OIL COOLER CCS INLET ISOLATION

CLOSE 1-THV-70-554A, CCP 1A-A OIL COOLERS CCS OUTLET THROTTLE.

CLOSE 1-DRV-67-1017B, CCP OIL CLR ERCW SUP XTIE HDR DRAIN.

OPEN 1-ISV-67-1015B, CCP OIL CLR ERCW SUP XTIE ISOL.

OPEN 1-ISV-67-1016B, CCP OIL CLR ERCW SUP XTIE ISOL.

ENSURE cap removed, THEN OPEN 1-DRV-70-782A, CCP 1A-A OIL COOLERS  
CCS OUTLET DRAIN to establish ERCW flow to oil coolers.

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

1-AOI-15, Loss of Component Cooling Water (CCS), Rev 3, Attachment 1,  
Alignment of ERCW to CCP 1A-A Lube Oil Coolers.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable

Facility: <u>Watts Bar</u>	Date of Examination: <u>7/20/2015</u>	
Exam Level: RO <input type="checkbox"/> SRO-I <input checked="" type="checkbox"/> SRO-U <input type="checkbox"/>	Operating Test No.: <u>301</u>	
Control Room Systems: * 8 for RO; 7 for SRO-I; 2 or 3 for SRO-U		
System / JPM Title	Type Code*	Safety Function
a. Retrieve a Dropped Rod. 001 A2.03, 3.5/4.2 CFR 41.7 / 45.5 to 45.8	A, M	1
b. Perform 1-SOI-63.01, Safety Injection System, Section 8.3.1, Add Water to CLA 1. 006 A4.07, 4.4/4.4 CFR 41.7/45.5 to 45.8	D, L	2
c. Isolate Cold Leg Accumulators per 1-E-1, Loss of Reactor or Secondary Coolant. 011 EA1.09, 4.3/4.3,	A,EN,D	3
d. Start #2 RCP per 1-SOI-68.02, Reactor Coolant Pumps. 003 A1.02, 2.9/2.9 CFR 41.5/45.5, CFR 41.7 / 45.5 / 45.6	A,M,L	4P
e. Shutdown 1B MFP using 1-SOI-2&3.01, Condensate and Feedwater Systems. 059 A4.03 2.9/2.9 CFR 41.7/45.5 to 45.8	N	4S
f. Align RHR Spray per 1-FR-Z.1, High Containment Pressure. E14 EA1.1, 3.7 / 3.7 CFR 41.7 / 45.5 / 45.6	A, D	5
g. Synchronize 1A-A DG from the Main Control Room per SOI-82.01, Diesel Generator (DG) 1A-A. 064 A1.03, 3.9/3.9 CFR 41.7/45.5 to 45.8	A,EN,D	6
h. Not Applicable	N/A	N/A
In-Plant Systems* (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)		
i Perform 1-SOI-62.01, 1-SOI-62.01, CVCS – Charging and Letdown, Section 8.9, Seal Injection Filter Swap. 003 A4.01 3.3/3.2 CFR 41.7/45.5 to 45.8	D,R	4P
j. Perform 2-ES-1.1, SI Termination, Appendix E actions to support SI Termination. E02 EA1.1, 4.0/3.9 CFR 41.7/45.5/45.6	E, EN,N	3
k. Perform 1-AOI-15, Loss of Component Cooling Water (CCS), Attachment 1, Alignment of ERCW to CCP 1A-A Lube Oil Coolers. 008 1.02, 3.3/3.4 CFR 41.2 to 41.9/45.7 to 45.9	E,M,R	8
* All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all five SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.		
* Type Codes	Criteria for RO / SRO-I / SRO-U	
A)lternate path (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (EN)gineered safety feature (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator	4-6 / 4-6 / 2-3  $\leq 9 / \leq 8 / \leq 4$ $\geq 1 / \geq 1 / \geq 1$ $\geq 1 / \geq 1 / \geq 1$ (control room system) $\geq 1 / \geq 1 / \geq 1$ $\geq 2 / \geq 2 / \geq 1$ $\leq 3 / \leq 3 / \leq 2$ (randomly selected) $\geq 1 / \geq 1 / \geq 1$	

**Instant Senior Reactor Operator Summary****A. Task/KA/Safety Function:**

RETRIEVE A DROPPED ROD / 001 Control Rod Drive System (A2.03) (3.5/4.2)/  
Safety Function 1

**Task Standard:**

The applicant:

- 1) Performs actions of AOI-2, Malfunction of Reactor Control System, Section 3.3, Dropped RCCA, to withdraw Shutdown Bank D rod C-5.
- 2) Diagnose that Shutdown Bank D has dropped, and performs IMMEDIATE ACTIONS by manually tripping the reactor.

**Critical Steps:**

Applicant rotates 1-RBSS, ROD BANK SELECT to the left from the MAN position to the SDD position to select shutdown bank D.

Applicant places toggle switches for rods E-13, N-11, & L-3 in the disconnect position (up position) in cabinet 1-XS-85-1.

Upon recognition of Shutdown Bank D rods dropping, C-5 rod drop, applicant places the Reactor Trip hand switch on 1-M-4 or 1-M-6 to the TRIP position.

**Alternate Path:**

When Shutdown Bank D is withdrawn to greater than or equal to 32 steps, C-5 rod will drop into the core. Applicant will manually trip the reactor in accordance with 1-AOI-2, Malfunction of Reactor Control System, Section 3.3, Dropped RCCS, Step 2 RNO.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**The applicant will perform actions of the following procedures:**

1-AOI-2, Malfunction of Reactor Control System, Section 3.3, Dropped RCCA, Rev. 2

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**B. Task/KA/Safety Function:**

FILL COLD LEG ACCUMULATOR #1/ (006 A4.07) (4.4/4.4) Safety Function 2

**Task Standard:**

Applicant adds water to the cold leg accumulator using 1A-A Safety Injection pump, in accordance with SOI-63.01, Safety Injection System, Section 8.3.1, Add Water to CLA 1, until 131-A, CL ACCUM 4 LEVEL HI/LO is DARK.

**Critical Steps:**

To fill CLA #1, the applicant:

Closes 1-FCV-63-152, SI PMP A TO CL 1-2-3-4.

Opens 1-HS-30-187, TEST LINE ISOL, 1-HS-63-71A, CKV TEST LINE TO HUT, and 1-HS-63-23A, CLA FILL FROM SI PMPS.

Starts 1A-A SI pump.

Opens 1-HS-63-115A, MAKEUP TO CL ACCUM 1

When level has been restored, the applicant:

Closes 1-HS-63-115A, MAKEUP TO CL ACCUM 1, 1-HS-30-187, TEST LINE ISOL, 1-HS-63-71A, CKV TEST LINE TO HUT, and 1-HS-63-23A, CLA FILL FROM SI PMPS.

Upon receiving the cue that 20 minutes have elapsed, stops the 1A-A SI Pump.

Opens 1-FCV-63-152, SI PMP A TO CL 1-2-3-4.

**Alternate Path:**

Not Applicable.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable.

**The applicant will perform actions of the following procedures:**

1-SOI-63.01, Safety Injection System, Section 8.3.1, Add Water to CLA.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**C. Task/KA/Safety Function**

ISOLATE COLD LEG ACCUMULATORS PER E-1, LOSS OF REACTOR OR SECONDARY COOLANT / 011 Emergency Core Cooling System 011 EA1.09/ Safety Function 3

**Task Standard:**

The applicant:

- 1.) Isolates Cold Leg Accumulators 1 and 3 per E-1 Step 25 AER.
- 2.) Vents Cold Leg Accumulators 2 and 4 per E-1, Step 25 RNO.

**List of Critical Steps**

Locates and places 1-FCV-63-118, CLA 1 Isolation valve in CLOSE.

Locates and places 1-FCV-63-80, CLA 3 Isolation valve in CLOSED.

Determines 1-FCV-63-98, CLA 2 and 1-FCV-63-67 CLA 4 Isolation valves will not close.

RESETS Phase B isolation.

OPENS Containment air supply valves 1-FCV-32-80, 1-FCV-32-102, and 1-FCV-32-110.

OPENS 1-FVCV-63-107, ACCUMULATOR 2 N2 MAKEUP VALVE.

OPENS 1-FCV-63-63, ACCUMULATOR 4 N2 MAKEUP VALVE.

OPENS 1-FCV-63-65, Vent Header Isolation.

**List of Steps that Constitute an Alternate Path**

Power is lost to RX MOV BD 1B1-B, which prevents closure of 1-FCV-63-98, CLA 2 Isolation valve, and 1-FCV-63-80, CLA 4 Isolation Valve. This requires entry into and performance of Step 25 RESPONSE NOT OBTAINED actions.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

1-E-1. Loss of Reactor or Secondary Coolant.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Task is performed to limit N2 injection into the RCS which could interfere with long term core cooling.

**D. Task/KA/Safety Function:**

START REACTOR COOLANT PUMP #2 / 003 Reactor Coolant Pump (003 A4.02)  
(2.9/2.9) / Safety Function 4P

**Task Standard:**

The applicant :

- 1.) Performs actions of SOI-68.02, Reactor Coolant Pumps, to start RCP #2.
- 2.) Evaluates #2 RCP motor amps, determines that amps are not returning to below RED line and stops RCP #2.

**List of Critical Steps:**

START RCP #2 Oil Lift Pump

CLOSE PZR SPRAY, 1-PCV-68-340B.

START RCP #2.

STOP RCP #2 Oil Lift Pump

STOP and LOCK OUT #2 RCP upon determination of motor amps above RED line.

**Alternate Path:**

After #2 RCP Oil Lift Pump is stopped per SOI-68.02, motor amps will rise above the RED line, requiring the RCP to be stopped.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different:**

Not Applicable.

**Procedure Name/Number and Section pertaining to the task:**

SOI-68.02 Reactor Coolant Pumps, Section 5.0, Startup.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**E. Task/KA/Safety Function**

SHUTDOWN 1B MFP USING 1-SOI-2&3.01, CONDENSATE AND FEEDWATER SYSTEMS / 059 A1.07 (2.5/2.6) / Safety Function 4S

**Task Standard:**

The applicant performs 1-SOI-2&3.01, Condensate and Feedwater System, Section 7.3.1, TDMFP Shutdown, Steps 4 through 15 to remove the 1B MFP from service.

**List of Critical Steps**

**PLACE** 1-SIC-46-20B, MFPT B- SPEED CONTROL in MANUAL, and **LOWER** speed slowly.

**WHEN** MFP turbine speed is approx 3300 rpm, **THEN TRIP** the 1B MFP Turbine (using 1-HS-46-36A, MFPT B TRIP-RESET).

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different:**

Not Applicable.

**Procedure Name/Number and Section pertaining to the task:**

1-SOI-2&3.01, Condensate and Feedwater System, Section 7.3.1, TDMFP Shutdown, Rev 0008.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable.

**F. Task/KA/Safety Function**

PLACE RHR SPRAY IN SERVICE PER 1-FR-Z.1, HIGH CONTAINMENT PRESSURE / E14 High Containment Pressure / EA1.1(3.7/3.7) (41.7/45.5/45.6)

**Task Standard:**

The applicant:

1. Performs actions to place Train B RHR Spray in service.
2. Determines 1-HS-72-41 has failed and will not open.
3. Enters 10.b RNO, and places Train A RHR Spray in service.

**List of Critical Steps**

IF RHR aligned for cold leg recirculation, THEN ENSURE 1-FCV-63-94 OPEN.

CLOSE RHR injection 1-FCV-63-93.

OPEN RHR spray 1-FCV-72-40.

**List of Steps that Constitute an Alternate Path**

During performance of 1-FR-Z.1, Step 10, 1-HS-72-41 fails to open. Requires performance of Step 10.b RNO to place Train A RHR spray in service.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

1-FR-Z.1, High Containment Pressure. Step 10.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Task is associated with maintenance of the containment barrier to fission product release.

**G. Task/KA/Safety Function**

SYNCHRONIZE DG 1A-A FROM THE MCR / 064 Emergency Diesel Generators (A4.01) (4.0/4.3) / Safety Function 6

**Task Standard:**

The applicant:

- 1.) Synchronizes 1A-A Diesel Generator to the shutdown board from the MCR, per SOI-82.01 Section 8.1.4, and then loads the DG to 3.5 to 4 MW and 0.75-1.25 MVARs.
- 2.) Determines that an emergency stop of the diesel generator is required upon receipt of annunciator 196-D, CRANKCASE PRESSURE HI and emergency stops the 1A-A Diesel Generator.

**List of Critical Steps**

PLACE 1-HS-82-18, DG MODE SELECTOR Switch, in PARALLEL [0-M-26].

PLACE 1-HS-57-47, DG SYNC SWITCH, in SYN [0-M-26].

WHEN TRAIN 1A-A SYNCHROSCOPE (1-XI-82-1) reaches 12 o'clock, THEN TURN 1-HS-57-46A, 1912 - DG TO SD BD 1A-A, to CLOSE.

LOAD DG promptly using 1-HS-82-13, SPEED CONTROL to at least 1.1 Megawatts as indicated on 1-EI-82-10A, DG MEGAWATTS (0-M-26).

MAINTAIN DG MEGAVARS 0.75 to 1.25 OUTGOING on 1-EI-82-11A, with 1-HS-82-12, VOLTAGE REGULATOR.

WHEN Window 196-D, CRANKCASE PRESSURE HI alarm is received, then DEPRESS 1-HS-82-17A, EMERGENCY STOP pushbutton on 0-M-26.

**List of Steps that Constitute an Alternate Path**

When annunciator 196-D, CRANKCASE PRESSURE HI is received, the applicant depresses emergency stop pushbutton on the 1A-A Diesel Generator panel 0-M-26.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

SOI-82.01, Diesel Generator (DG) 1B-B, Section 8.1.4, Manual-Remote Synchronizing DG.

ARI-195-201, 196-D, CRANKCASE PRESSURE HI.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable

**H.** Not Applicable

**I. Task/KA/Safety Function**

SWAP SEAL INJECTION FILTERS / 003 Reactor Coolant Pumps (A4.01) (3.3/3.2) / Safety Function 4P

**Task Standard:**

Seal Injection Filters have been swapped with A in service and B out of service in accordance with SOI-62.01, CVCS-Charging and Letdown, Section 8.9.2, Replacing Filter B with Filter A.

**List of Critical Steps**

SLOWLY OPEN 1-ISV-62-548, CVCS SEAL WTR INJ FLTR A IN ISOL.

SLOWLY OPEN 1-ISV-62-550, CVCS SEAL WTR INJ FILTER A OUT ISOL.

CLOSE 1-ISV-62-549, CVCS SEAL WTR INJ FILTER B OUT ISOL.

CLOSE 1-ISV-62-547, CVCS SEAL WTR INJ FLTR B IN ISOL.

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

SOI-62.01, CVCS-Charging and Letdown, Section 8.9.2, Replacing Filter B with Filter A.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable

**J. Task/KA/Safety Function**

PERFORM 2-ES-1.1, SI TERMINATION, APPENDIX E, OPERATION OF MOV'S AT TRAIN A ELECTRICAL BOARDS / E02 EA1.1, 4.0/3.9 CFR 41.7/45.5/45.6/ Safety Function 3

**Task Standard:**

Applicant performs 2-ES-1.1, SI Termination, Appendix E, Operation of MOV's at Train A Electrical Boards, and describes local manipulations associated with 2-FCV-63-26, 2-FCV-62-132, AND 2-FCV-62-135.

**List of Critical Steps**

PLACE 2-XS-63-26-A to AUX position.  
PLACE 2-HS-63-26C to CLOSE position.  
PLACE 2-XS-62-132-A to AUX position.  
PLACE 2-HS-62-132C to OPEN position.  
PLACE 1-XS-62-135-A to AUX position.  
PLACE 1-HS-62-135C to CLOSE position.

**List of Steps that Constitute an Alternate Path**

Not Applicable.

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

2-ES-1.1, SI TERMINATION, DRAFT, Appendix E, Operation of MOVs at Train A Electrical Boards.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Task is associated with maintenance of the reactor coolant system barrier.

**K. Task/KA/Safety Function**

PERFORM 1-AOI-15, LOSS OF COMPONENT COOLING WATER (CCS),  
ATTACHMENT 1 / 008 Component Cooling Water (A2.02) (3.2/3.5) / Safety Function  
8

**Task Standard:**

The applicant performs actions of 1-AOI-15, Loss of Component Cooling (CCS),  
Attachment 1, Alignment of ERCW to CCP 1A-A Lube Oil Coolers.

**List of Critical Steps**

CLOSE 1-ISV-67-602A, CVCS CCP ROOM CLR 1A-A ERCW RET ISOL.

CLOSE 1-ISV-70-553A, CCP 1A-A OIL COOLER CCS INLET ISOLATION

CLOSE 1-THV-70-554A, CCP 1A-A OIL COOLERS CCS OUTLET THROTTLE.

CLOSE 1-DRV-67-1017B, CCP OIL CLR ERCW SUP XTIE HDR DRAIN.

OPEN 1-ISV-67-1015B, CCP OIL CLR ERCW SUP XTIE ISOL.

OPEN 1-ISV-67-1016B, CCP OIL CLR ERCW SUP XTIE ISOL.

ENSURE cap removed, THEN OPEN 1-DRV-70-782A, CCP 1A-A OIL COOLERS CCS  
OUTLET DRAIN to establish ERCW flow to oil coolers.

**List of Steps that Constitute an Alternate Path**

Not Applicable

**If similar to an event in the Dynamic Scenario, then an explanation of how it is different.**

Not Applicable

**Procedure Name/Number and Section pertaining to the task.**

1-AOI-15, Loss of Component Cooling Water (CCS), Rev 3. Attachment 1, Alignment  
of ERCW to CCP 1A-A Lube Oil Coolers.

**Documentation justifying classification of Engineered Safety Function, when applicable:**

Not Applicable