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ES-301 **Administrative Topics Outline** **Form ES-301-1**

Facility: Shearon Harris Date of Examination: 3/9/2009

Exam Level: **RO** Operating Test No.: 05000400

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	Determine Rod Misalignment Using Thermocouples (JPM-CR-139) *K/A G2.1.7* **2009a NRC RO A1-1**
Conduct of Operations	D, R	Perform A Manual Shutdown Margin Calculation (JPM-ADM-019) *K/A G2.1.25* **2009a NRC RO A1-2**
Equipment Control	M, R	Perform Quadrant Power Tilt Ratio Surveillance (JPM-CR-036) *K/A G2.2.12* **2009a NRC RO A2**
Radiation Control	D, R	Determine TEDE While Working in a High Airborne Area (JPM-ADM-022) *K/A G2.3.4* **2009a NRC RO A3 (Common)**
Emergency Procedures/Plan	N/A	**NOT SELECTED FOR RO**

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)

2009a NRC RO Admin JPM Summary

2009a NRC RO A1-1 – Determine Rod Misalignment Using Thermocouples
(JPM-CR-139 Modified)

G2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.
(CFR: 41.5 / 43.5 / 45.12 / 45.13) RO 4.4 SRO 4.7

The plant is at 90% power with a load decrease in progress when a control rod is observed indicating 24 steps higher than group demand. The candidate must perform Attachment 2 of AOP-001, Malfunction of Rod Control and Indication System, to calculate the temperature difference between the affected thermocouple and its symmetric thermocouples. This is a bank JPM that has been modified by changing the initial conditions, the misaligned rod, and the final outcome (the calculation will be within 10°F, indicating that the rod is NOT misaligned rod but instead is a rod position indication problem).

2009a NRC RO A1-2 – Perform A Manual Shutdown Margin Calculation
(JPM-ADMIN-019)

G2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc.
(CFR: 41.10 / 43.5 / 45.12) RO 3.1 SRO 2.8

The plant is operating at 75% power and the USCO will direct the candidate to complete OST-1036, Shutdown Margin Calculation Modes 1-5, Section 7.3, for the current plant conditions.

2009a NRC RO A2 – Perform Quadrant Power Tilt Ratio Surveillance
(JPM-CR-036 Modified)

G2.2.12 Knowledge of surveillance procedures
(CFR: 41.10 / 45.13) RO 3.7 SRO 4.1

The candidate will perform a QPTR calculation as required for a misaligned rod in accordance with OST-1039, Calculation of Quadrant Power Tilt Ratio. This is a bank JPM that has been modified by changing the NIS values and the initial power level.

2009a NRC RO A3 – Determine TEDE While Working in a High Airborne Area
(JPM-ADM-022)

G2.3.4 – Knowledge of radiation exposure limits under normal or emergency conditions.
(CFR: 41.12 / 43.4 / 45.10) RO 3.2 SRO 3.7

The candidate must calculate and determine if a respirator is required or should not be worn when working in an area with a known dose rate and airborne contamination for a given length of time.

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Facility: Shearon Harris Date of Examination: 3/9/2009

Exam Level: **SRO** Operating Test No.: 05000400

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	Determine Rod Misalignment Using Thermocouples (JPM-CR-139) *G2.1.7* **2009a NRC SRO A1-1**
Conduct of Operations	D, R	Determine Boric Acid Addition Following Control Room Evacuation (JPM-IP-049) *K/A G2.1.25* **2009a NRC SRO A1-2**
Equipment Control	M, R	Perform Quadrant Power Tilt Ratio Surveillance (JPM-CR-036) *K/A G2.2.12* **2009a NRC SRO A2**
Radiation Control	D, R	Determine TEDE While Working in a High Airborne Area (JPM-ADM-022) *G2.3.4* **2009a NRC SRO A3 (Common)**
Emergency Procedures/Plan	D, R	Classify an Event (JPM-CR-193) *G2.4.41* **2009a NRC SRO A4**

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)

2009a NRC SRO Admin JPM Summary

2009a NRC SRO A1-1 - Determine Rod Misalignment Using Thermocouples (JPM-CR-139 Modified)

G2.1.7 Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.
(CFR: 41.5 / 43.5 / 45.12 / 45.13) RO 4.4 SRO 4.7

The plant is at 90% power with a load decrease in progress when a control rod is observed indicating 12 steps higher than group demand. The candidate must perform Attachment 2 of AOP-001, Malfunction of Rod Control and Indication System, to calculate the temperature difference between the affected thermocouple and its symmetric thermocouples. This is a bank JPM that has been modified by changing the initial conditions, the misaligned rod, and the final outcome (the calculation will be within 10°F, indicating that the rod is NOT misaligned but instead is a rod position indication problem). The SRO will determine Tech Spec requirements for the determined conditions.

2009a NRC SRO A1-2 - Determine Boric Acid Addition Following Control Room Evacuation (JPM-IP-049)

G2.1.25 Ability to interpret reference materials, such as graphs, curves, tables, etc.
(CFR: 41.10 / 43.5 / 45.12) RO 3.9 SRO 4.2

The Control Room has been evacuated and the MCB transfer to the ACP has been completed. Plant management has directed a plant cooldown to mode 5 utilizing AOP-004. Given an OST-1036 cold shutdown boron requirement, the candidate must use curves to calculate gallons of Boric Acid and change in Boric Acid Tank level to complete section 3.2 step 25.

2009a NRC SRO A2 – Perform Quadrant Power Tilt Ratio Surveillance (JPM-CR-036 Modified)

G2.2.12 Knowledge of surveillance procedures
(CFR: 41.10 / 45.13) RO 3.7 SRO 4.1

The candidate will perform a QPTR calculation as required for a misaligned rod in accordance with OST-1039, Calculation of Quadrant Power Tilt Ratio. This is a bank JPM that has been modified by changing the NIS values and the initial power level. The SRO will determine Tech Spec requirements for the determined conditions.

2009a NRC SRO A3 - Determine TEDE While Working in a High Airborne Area (JPM-ADM-022)

G2.3.4 Knowledge of radiation exposure limits under normal or emergency conditions.
(CFR: 41.12 / 43.4 / 45.10) RO 3.2 SRO 3.7

The candidate must calculate and determine if a respirator is required or should not be worn when working in an area with a known dose rate and airborne contamination for a given length of time.

2009a NRC SRO Admin JPM Summary

2009a NRC SRO A4 - Classify an Event (JPM-CR-193)

G2.4.41 Knowledge of the emergency action level thresholds and classifications (CFR: 41.10 / 43.5 / 45.11) RO 2.9 SRO 4.6

Given a set of initial conditions and the EAL Flow Path, the candidate must classify the appropriate Emergency Action Level for the event in progress.

Facility: Shearon Harris Date of Examination: 3/9/2009

Exam Level: RO SRO-I **SRO(U)** Operating Test No.: 05000400

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. Restore Power to Emergency Buses (EPP-001, Attachment 1) *K/A 062A4.01*	N, S	6
b. **Use ESW System As A Backup Source of Water To AFW (PATH-1, OP-137) (JPM-CR-107)** *K/A 054 AA1.01*	**L, D, S**	**4S**
c. **Manually Align SI Equipment After LOSP (EOP-EPP-003) (JPM-CR-056)** *K/A 006 A4.02*	**A, D, EN, S**	**2**
d. Place Normal Letdown In Service (OP-107) (JPM-CR-222) *K/A 004 A4.06*	A, D, S	1
e. Containment Cooling to Max Cooling Mode (OP-169) (JPM-CR-033) *K/A 022 A4.01* **RO ONLY**	D, S	5
f. Loss of All CCW (AOP-014) (2007 NRC Exam JPM h.) *K/A 008 A2.01*	P, A, S	8
g. Respond to High RCS Pressure while Solid (AOP-019) (JPM-CR-052) *K/A 010 A1.07*	L, D, S	3
h. **Startup a Reactor Coolant Pump following Maintenance (OP-100) (JPM-CR-005)** *K/A 003 A2.02*	**A, L, M, S**	**4P**

Facility: Shearon Harris	Date of Examination: 3/9/2009	
Exam Level: RO SRO-I **SRO(U)**	Operating Test No.: 05000400	
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for **SRO-U**)		
i. Reset Safety Injection Locally (PATH 1, Attachment 1) *K/A 013 A2.06*	E, N	2
j. Local Inspection of Annunciator Cabinets (AOP-037, Attachment 1) (JPM-IP-144) *K/A 016 A2.02*	**D, E**	**7**
k. Local M/U to VCT via Manual Emergency Boration (AOP-003, Attachment 2) (JPM-IP-088) *K/A 004 A2.14*	**D, E, R**	**1**

@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 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 (4/4/2)
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4 (7/6/4)
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1 (3/3/2)
(EN)gineered safety feature	- / - / ≥1 (1/1/1)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1 (3/3/2)
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1 (3/3/1)
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (1/1/0)
(R)CA	≥ 1 / ≥ 1 / ≥ 1 (1/1/1)
(S)imulator	

2009a NRC Control Room/In-Plant JPM Summary

JPM a - Restore Power to Emergency Buses (New)

062 A4.01 Ability to manually operate and/or monitor in the control room: All breakers (including available switchyard)
(CFR: 41.7 / 45.5 / to 45.8) RO 3.3 SRO 3.1

A loss of offsite power and a failure of both diesels has occurred requiring entry into EPP-001, Loss of AC Power to 1A-SA and 1B-SB Buses. The candidate will be informed that Offsite Power has been restored. The task will be to restore power to both of the Emergency Buses from Offsite Power using Attachment 1 of EPP-001.

JPM b - Using ESW System As A Backup Source of Water To AFW (JPM-CR-107)

054 AA1.01 – Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater AFW controls, including the use of alternate AFW sources
(CFR 41.7 / 45.5 / 45.6) RO 4.5 / SRO 4.4

Following a LOCA the operator is informed that a leak developed in the Condensate Storage Tank (CST). The CST level has decreased to < 10%. The candidate is directed to supply ESW from the A Header to both the A AFW Pump and the Turbine Driven AFW pumps. This will require shutting down the B MDAFW Pump and 'A' Train of Containment Fan Coolers in addition to the ESW valve alignment.

JPM c - Manually Align SI After LOSP (JPM-CR-056) Alternate Path, Engineered Safety Feature

006 A4.02 Ability to manually operate and/or monitor in the control room: Valves
(CFR: 41.7 / 45.5 to 45.8) RO 4.0 SRO 3.8

Following a reactor trip and loss of offsite power, the crew transitions to recovery procedure EPP-003, Loss of All AC Power Recovery with SI Required. The candidate will be directed to align SI valves and establish an injection flow path for SI. During the lineup a CSIP Alternate Miniflow valve will fail to stoke requiring the candidate to complete the alternate path step to shut the associated block valve.

JPM d – Place Normal Letdown in Service (JPM-CR-222) Alternate Path

004 A4.06 - Ability to manually operate and/or monitor in the control room: Letdown isolation and flow control valves (CFR: 41/7 / 45.5 to 45.8) RO 3.6 / SRO 3.1

With the plant operating at 100% steady state the candidate will be informed that letdown was out of service for maintenance. Maintenance has been completed. The clearance has been removed and Excess letdown has just been taken off.

The candidate will place letdown in service IAW OP-107. When the candidate places the letdown pressure control valve in automatic it will fail closed causing letdown pressure to rapidly increase. The candidate will be expected to recognize the failure and return pressure to normal. This can be accomplished by either closing the in service letdown valve or place the pressure controller back to manual (per OMM-001 guidance), adjust pressure to normal and report the failure to the SCO.

2009a NRC Control Room/In-Plant JPM Summary (continued)

JPM e - Containment Cooling to Max Cooling Mode (JPM-CR-033)

022 A4.01 Ability to manually operate and/or monitor in the control room: CCS fans (CFR: 41.7 / 45.5 to 45.8) RO 3.6 SRO 3.6

In preparation for an upcoming Containment entry, Containment Cooling is to be placed in Maximum Cooling Mode. This will require the candidate to realign fans and dampers in accordance with OP-169, Containment Cooling System. The candidate will also have to verify the correct damper alignment using status light box indications.

JPM f - Loss of All CCW (2007 NRC Exam JPM h) Alternate Path

008 A2.01 Ability to (a) predict the impacts of the following malfunctions or operations on the CCWS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of CCW Pump (CFR: 41.5 / 43.5 / 45.3 / 45.13) RO 3.3 SRO 3.6

With the plant at 100% power and one CCW pump under clearance the candidate will be tasked with responding to a loss of the running CCW pump. This will require the candidate to obtain AOP-014, Loss of Component Cooling Water, and complete the actions of loss of all CCW. The candidate will be required to complete the RNO actions of isolating letdown and charging. Since CCW will not be available in less than 10 minutes the candidate will be required to manually trip the Reactor, secure the Reactor Coolant Pumps and shut the Pressurizer Spray Valves.

JPM g - Respond to High RCS Pressure while Solid (JPM-CR-052) Time Critical

010 A1.07 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PZR PCS controls including: RCS pressure (CFR: 41.5 / 45.5) RO 3.7 SRO 3.7

Solid plant Mode 4 operations will be in progress. The candidate will have to respond to a failure of the RCS pressure control valve that causes RCS pressure to rapidly increase. The candidate will perform the immediate actions of AOP-019, Malfunction of RCS Pressure Control, and stop the running CSIP in less than 2 minutes from the onset of the pressure excursion.

JPM h - Startup a Reactor Coolant Pump following Maintenance (JPM-CR-005 Modified) Alternate Path

003 A2.02 Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown of an RCP (CFR: 41.5 / 43.5/ 45.3 / 45/13) RO 3.7 SRO 3.9

A plant startup will be in progress with the 'A' and 'B' RCPs in operation. Maintenance has been completed on the 'C' RCP and the candidate will be directed to start the 'C' RCP in accordance with OP-100, Reactor Coolant System. Soon after the RCP is started it will develop abnormal vibrations as indicated on the RCP Vibration Monitor in the MCR and MCB annunciators. The candidate will be expected to determine that entry conditions are met for AOP-018, Reactor Coolant Pumps Abnormal Conditions and enter the AOP. The RCP vibrations will continue to rise until they exceed the operational trip limits of AOP-018 Attachment 1 (>20 mils shaft). The candidate is expected to secure the 'C' RCP IAW AOP-018.

2009a NRC Control Room/In-Plant JPM Summary (continued)

JPM i - Reset Safety Injection Locally (New) Alternate Path

013 A2.06 Ability to (a) predict the impacts of the following malfunctions or operations on the ESFAS; and (b) based Ability on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations; Inadvertent ESFAS actuation
(CFR: 41.5 / 43.5 / 45.3 / 45.13) RO 3.7 / SRO 4.0

Following an inadvertent SI actuation and meeting SI termination criteria per Path-1 the crew is directed to reset SI. The candidate will be informed that SI Train 'B' did not reset from the MCR. The candidate will then be directed to locally reset Safeguards Train 'B' per Attachment 12 of PATH-1 Guide. This will require the candidate to go to the SSPS cabinet and simulate placing protection system breakers to the OFF position and then positioning the appropriate test switch to locally place the Protection System Train 'B' in test.

JPM j - Local Inspection of Annunciator Cabinets (JPM-IP-144)

016 A2.02 Ability to (a) predict the impacts of the following malfunctions or operations on the NNIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of power supply
(CFR: 41.5 / 43.5 / 45.3 / 45.5) RO 3.9 SRO 3.2

The candidate will be directed by the MCR to locally inspect System 1 Annunciator Power Supply Cabinets for the cause of a MCR alarm using Attachment 1 of AOP-037, Loss of Main Control Room Annunciators. They will be required to locate the cabinets, determine which power supplies have failed, and then report the findings to the MCR.

JPM k - Local Makeup to VCT via Manual Emergency Boration (JPM-IP-088)

004 A2.14 Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Emergency boration
(CFR: 41.5/ 43/5 / 45/3 / 45/5) RO 3.8 SRO 3.9

The candidate will be informed that the Reactor Makeup Control System has malfunctioned requiring the candidate to locally makeup to the VCT in accordance with Attachment 2 of AOP-003, Malfunction of Reactor Makeup Control. Using this procedure the candidate will be directed to locate the manual Emergency Boration and Reactor Makeup Water valves and then simulate positioning these valves to the control rooms mark.

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ES-401, Rev. 9 PWR Examination Outline Form ES-401-2

Facility: HARRIS Date of Exam: MARCH (TBD) 2009

Tier	Group	RO K/A Category Points											SRO-Only Points		
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	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	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	3	2	2	2	3	2	3	2	3	28	3	2	5
	2	1	1	1	1	1	1	1	0	1	1	1	10	2	1	3
	Tier Totals	4	4	4	3	3	3	4	2	4	3	4	38	5	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 ±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 RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
007EK2.03	Reactor Trip - Stabilization - Recovery / 1	3.5	3.6	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	Reactor trip status panel
009EA2.15	Small Break LOCA / 3	3.3	3.4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	RCS parameters
011EG2.2.44	Large Break LOCA / 3	4.2	4.4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	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
022AK1.03	Loss of Rx Coolant Makeup / 2	3	3.4	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Relationship between charging flow and PZR level
025AG2.4.34	Loss of RHR System / 4	4.2	4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects
026AA2.04	Loss of Component Cooling Water / 8	2.5	2.9	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	The normal values and upper limits for the temperatures of the components cooled by CCW

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
027AA1.03	Pressurizer Pressure Control System Malfunction / 3	3.6	3.5	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	Pressure control when on a steam bubble
029EG2.1.20	ATWS / 1	4.6	4.6	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to execute procedure steps.
038EK1.01	Steam Gen. Tube Rupture / 3	3.1	3.4	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	Use of steam tables
057AA2.04	Loss of Vital AC Inst. Bus / 6	3.7	4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	ESF system panel alarm annunciators and channel status indicators
058AA1.02	Loss of DC Power / 6	3.1	3.1	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	Static inverter dc input breaker, frequency meter, ac output breaker and ground fault detector
062AK3.03	Loss of Nuclear Svc Water / 4	4	4.2	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Guidance actions contained in EOP for Loss of nuclear service water

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
065AK3.04	Loss of Instrument Air / 8	3	3.2	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the reasons for the following responses as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Cross-over to backup air supplies
077AA1.05	Generator Voltage and Electric Grid Disturbances / 6	3.9	4.0	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	Engineered Safety Features
WE04EK2.2	LOCA Outside Containment / 3	3.8	4.0	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	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	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Normal, abnormal and emergency operating procedures associated with (Loss of Secondary Heat Sink).
WE11EK2.1	Loss of Emergency Coolant Recirc. / 4	3.6	3.9	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.
WE12EK1.2	Steam Line Rupture - Excessive Heat Transfer / 4	3.5	3.8	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the EMERGENCY PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Normal, abnormal and emergency operating procedures associated with (Uncontrolled Depressurization of all Steam Generators).

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
001AA1.05	Continuous Rod Withdrawal / 1	4.3	4.2	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to operate and / or monitor the following as they apply to (ABNORMAL PLANT EVOLUTION):(CFR: 41.7 / 45.5 / 45.6)	Reactor trip switches
005AG2.4.31	Inoperable/Stuck Control Rod / 1	4.2	4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Knowledge of annunciators alarms, indications or response procedures
024AK1.02	Emergency Boration / 1	3.6	3.9	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Relationship between boron addition and reactor power
033AK1.01	Loss of Intermediate Range NI / 7	2.7	3	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the (ABNORMAL PLANT EVOLUTION):(CFR: 41.8 to 41.10 / 45.3)	Effects of voltage changes on performance
037AA2.05	Steam Generator Tube Leak / 3	2.8	3.3	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Past history of leakage with current problem
074EA1.27	Inad. Core Cooling / 4	4.2	4.2	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	ECCS valve control switches and indicators

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
076AK3.05	High Reactor Coolant Activity / 9	2.9	3.6	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	Corrective actions as a result of high fission-product radioactivity level in the RCS
WE03EK2.2	LOCA Cooldown - Depress. / 4	3.7	4.0	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the interrelations between (EMERGENCY PLANT EVOLUTION) and the following:(CFR: 41.7 / 45.7 / 45.8)	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.
WE09EK3.2	Natural Circ. / 4	3.2	3.6	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the reasons for the following responses as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.5 / 41.10 / 45.6 / 45.13)	Normal, abnormal and emergency operating procedures associated with (Natural Circulation Operations).

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
003A4.04	Reactor Coolant Pump	3.1	3.0	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	RCP seal differential pressure instrumentation
004G2.1.19	Chemical and Volume Control	3.9	3.8	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to use plant computer to evaluate system or component status.
004K1.06	Chemical and Volume Control	3.1	3.1	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	Makeup system to VCT
005K6.08	Residual Heat Removal	2.2	2.4	☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Controllers and positioners
006A1.01	Emergency Core Cooling	3.1	3.4	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Avoidance of thermal and pressure stresses due to pump startup
007A3.01	Pressurizer Relief/Quench Tank	2.7	2.9	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Components which discharge to the PRT

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
007G2.4.31	Pressurizer Relief/Quench Tank	4.2	4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Knowledge of annunciators alarms, indications or response procedures
008K3.02	Component Cooling Water	2.9	3.1	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	CRDS
008K4.09	Component Cooling Water	2.7	2.9	☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	The "standby" feature for the CCW pumps
010K2.03	Pressurizer Pressure Control	2.8	3.0	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of electrical power supplies to the following:(CFR: 41.7)	Indicator for PORV position
012A1.01	Reactor Protection	2.9	3.4	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Trip setpoint adjustment
012K5.02	Reactor Protection	3.1	3.3	☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.7)	Power density
013K3.03	Engineered Safety Features Actuation	4.3	4.7	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	Containment

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
022K2.01	Containment Cooling	3.0	3.1	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of electrical power supplies to the following:(CFR: 41.7)	Containment cooling fans
026A1.01	Containment Spray	3.9	4.2	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	Containment pressure
026K1.01	Containment Spray	4.2	4.2	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	ECCS
039K5.05	Main and Reheat Steam	2.7	3.1	☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.7)	Bases for RCS cooldown limits
059A4.08	Main Feedwater	3.0	2.9	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Feed regulating valve controller
061A2.02	Auxiliary/Emergency Feedwater	3.4	3.5	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Air or MOV failure

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
062K4.03	AC Electrical Distribution	2.8	3.1	☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Interlocks between automatic bus transfer and breakers
063K2.01	DC Electrical Distribution	2.9	3.1	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of electrical power supplies to the following:(CFR: 41.7)	Major DC loads
063K3.01	DC Electrical Distribution	3.7	4.1	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	ED/G
064A3.13	Emergency Diesel Generator	3.0	2.9	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Rpm controller/megawatt load control (breaker-open/ breaker-closed effects)
064K6.08	Emergency Diesel Generator	3.2	3.3	☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Fuel oil storage tanks
073A2.01	Process Radiation Monitoring	2.5	2.9	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Erratic or failed power supply

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
076A3.02	Service Water	3.7	3.7	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Emergency heat loads
078G2.2.44	Instrument Air	4.2	4.4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	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
103K1.02	Containment	3.9	4.1	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	Containment isolation/containment integrity

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
001K2.05	Control Rod Drive	3.1	3.5	☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of electrical power supplies to the following:(CFR: 41.7)	M/G sets
011A1.01	Pressurizer Level Control	3.5	3.6	☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ Ability to predict and/or monitor changes in parameters associated with operating the (SYSTEM) controls including:(CFR: 41.5 / 45.5)	PZR level and pressure
014A4.01	Rod Position Indication	3.3	3.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ Ability to manually operate and/or monitor in the control room:(CFR: 41.7 / 45.5 to 45.8)	Rod selection control
015K5.11	Nuclear Instrumentation	3.3	3.7	☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the operational implications of the following concepts as they apply to the (SYSTEM):(CFR: 41.5 / 45.7)	Axial flux imbalance, including long-range effects
017K3.01	In-core Temperature Monitor	3.5	3.7	☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the (SYSTEM) will have on the following:(CFR: 41.7 / 45.6)	Natural circulation indications
035G2.2.42	Steam Generator	3.9	4.6	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
045A3.05	Main Turbine Generator	2.6	2.9	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ Ability to monitor automatic operations of the (SYSTEM) including:(CFR: 41.7 / 45.5)	Electrohydraulic control

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
071K4.04	Waste Gas Disposal	2.9	3.4	☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of (SYSTEM) design feature(s) and or interlock(s) which provide for the following:(CFR: 41.7)	Isolation of waste gas release tanks
079K1.01	Station Air	3.0	3.1	☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Knowledge of the physical connections and/or cause-effect relationships between (SYSTEM) and the following:(CFR: 41.2 to 41.9 / 45.7 to 45.8)	IAS
086K6.04	Fire Protection	2.6	2.9	☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ ☐ ☐ Knowledge of the effect that a loss or malfunction of the following will have on the (SYSTEM):(CFR: 41.7 / 45.7)	Fire, smoke and heat detectors

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.30	Conduct of operations	4.4	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to locate and operate components, including local controls.
G2.1.44	Conduct of operations	3.9	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of RO duties in the control room during fuel handling.
G2.2.20	Equipment Control	2.6	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the process for managing troubleshooting activities.
G2.2.25	Equipment Control	3.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.
G2.3.11	Radiation Control	3.8	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to control radiation releases.
G2.3.5	Radiation Control	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to use radiation monitoring systems
G2.3.7	Radiation Control	3.5	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to comply with radiation work permit requirements during normal or abnormal conditions

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.4.17	Emergency Procedures/Plans	3.9	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of EOP terms and definitions.
G2.4.32	Emergency Procedures/Plans	3.6	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of operator response to loss of all annunciators.
G2.4.9	Emergency Procedures/Plans	3.8	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
025AG2.2.36	Loss of RHR System / 4	3.1	4.2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
029EA2.09	ATWS / 1	4.4	4.5	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Occurrence of a main turbine/reactor trip
055EA2.03	Station Blackout / 6	3.9	4.7	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Actions necessary to restore power
057AG2.2.40	Loss of Vital AC Inst. Bus / 6	3.4	4.7	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to apply technical specifications for a system.
058AG2.4.20	Loss of DC Power / 6	3.8	4.3	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Knowledge of operational implications of EOP warnings, cautions and notes.
077AA2.10	Generator Voltage and Electric Grid Disturbances / 6	3.6	3.8	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Generator overheating and required actions

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
051AA2.02	Loss of Condenser Vacuum / 4	3.9	4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to ABNORMAL PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Conditions requiring reactor and/or turbine trip
061AG2.4.41	ARM System Alarms / 7	2.9	4.6	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Knowledge of the emergency action level thresholds and classifications.
we08EG2.4.47	RCS Overcooling - PTS / 4	4.2	4.2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.
WE13EA2.1	Steam Generator Over-pressure / 4	2.9	3.4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to determine and interpret the following as they apply to (EMERGENCY PLANT EVOLUTION):(CFR: 41.10 / 43.5 / 45.13)	Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
006A2.13	Emergency Core Cooling	3.9	4.2	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Inadvertent SIS actuation
012A2.01	Reactor Protection	3.1	3.6	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Faulty bistable operation
039A2.02	Main and Reheat Steam	2.4	2.7	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Decrease in turbine load as it relates to steam escaping from relief valves
076G2.4.30	Service Water	2.7	4.1	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Knowledge of events related to system operations/status that must be reported to internal orginizations or outside agencies.
103G2.4.4	Containment	4.5	4.7	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
002A2.01	Reactor Coolant	4.3	4.4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Loss of coolant inventory
034G2.1.23	Fuel Handling Equipment	4.3	4.4	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ This is a Generic, no stem statement is associated.	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
068A2.04	Liquid Radwaste	3.3	3.3	☐ ☐ ☐ ☐ ☐ ☐ ☐ ☑ ☐ ☐ ☐ Ability to (a) predict the impacts of the following on the (SYSTEM) and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:(CFR: 41.5 / 43.5 / 45.3 / 45.13)	Failure of automatic isolation

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.41	Conduct of operations	2.8	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the refueling processes
G2.2.13	Equipment Control	4.1	4.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of tagging and clearance procedures.
G2.2.40	Equipment Control	3.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to apply technical specifications for a system.
G2.3.12	Radiation Control	3.2	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiological safety principles pertaining to licensed operator duties
G2.3.14	Radiation Control	3.4	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities
G2.4.30	Emergency Procedures/Plans	2.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of events related to system operations/status that must be reported to internal orginizations or outside agencies.
G2.4.46	Emergency Procedures/Plans	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to verify that the alarms are consistent with the plant conditions.