

FACILITY NAME: Harris Nuclear Plant

Section 1

REPORT NUMBER: 05000400/2009-302

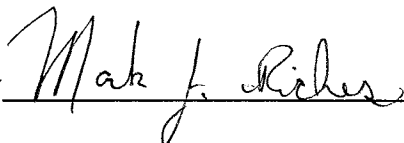
DRAFT ADMINISTRATIVE DOCUMENTS

CONTENTS:

- Draft Written Exam sample plan (ES-401-1/2)
- Draft Administrative Topics Outline (ES-301-1)
- Draft Control Room Systems & Facility Walk-Through Test Outline (ES-301-2)

Location of Electronic Files:

Submitted By:  _____

Verified By:  _____

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ES-301

Administrative Topics Outline

Form ES-301-1

Facility: <u>Harris Nuclear Plant</u>		Date of Examination: <u>11/30/2009</u>								
Examination Level: RO <input checked="" type="checkbox"/>	SRO <input type="checkbox"/>	Operating Test Number: <u>05000400/2009302</u>								
Administrative Topic (see Note)	Type Code*	Describe activity to be performed								
Conduct of Operations	M, R	Response to Voids In the Reactor Vessel – Calculate Reactor Vessel Maximum Vent Time. (JPM ADM-096) <i>K/A G2.1.20</i> 2009B NRC RO A1-1								
Conduct of Operations	M, R	Perform A Manual Shutdown Margin Calculation (JPM-ADM-019) <i>K/A G2.1.25</i> 2009B NRC RO A1-2								
Equipment Control	M, S	Perform OP-111, Att. 3 Low Head SI Standby Lineup Checklist. (JPM ADM-024) <i>K/A G2.2.15</i> 2009B NRC RO A2								
Radiation Control	N, R	Using Survey Maps, Simplified Drawings, Plant Maps and valve lists, determine stay times while performing a clearance activity (JPM ADM-100) <i>K/A G2.3.4</i> 2009B NRC RO A3								
Emergency Procedures/Plan	N/A	NOT SELECTED FOR RO 2009B NRC RO A4								
<p>NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.</p>										
<p>* Type Codes & Criteria:</p> <table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">(C)ontrol room, (S)imulator, or Class(R)oom</td> <td style="text-align: right;">(0)</td> </tr> <tr> <td style="padding-left: 20px;">(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)</td> <td style="text-align: right;">(0)</td> </tr> <tr> <td style="padding-left: 20px;">(N)ew or (M)odified from bank (≥ 1)</td> <td style="text-align: right;">(4)</td> </tr> <tr> <td style="padding-left: 20px;">(P)revious 2 exams (≤ 1; randomly selected)</td> <td style="text-align: right;">(0)</td> </tr> </table>			(C)ontrol room, (S)imulator, or Class(R)oom	(0)	(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)	(0)	(N)ew or (M)odified from bank (≥ 1)	(4)	(P)revious 2 exams (≤ 1; randomly selected)	(0)
(C)ontrol room, (S)imulator, or Class(R)oom	(0)									
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)	(0)									
(N)ew or (M)odified from bank (≥ 1)	(4)									
(P)revious 2 exams (≤ 1; randomly selected)	(0)									

2009B NRC RO Admin JPM Summary

2009B NRC RO A1-1 – Response to Voids In Reactor Vessel – Calculate Reactor Vessel Maximum Vent Time (JPM ADM-096) Modified

K/A EPE E10 EK3.2 - Natural Circulation with Steam Void in Vessel with/without RVLIS - Normal, abnormal and emergency operating procedures associated with (Natural Circulation with Steam Void in Vessel with/without RVLIS). RO 3.2 / SRO 3.7

The plant was at 100 percent power when a Small Break LOCA occurred. The RCP have been secured, SI terminated, RVLIS Upper Range reads 90 percent, PZR level is 96 percent, RCS Pressure is 1750 psig, Containment Temp is 181°F and Containment Hydrogen concentration is 1.72 percent. Based on these conditions a void has formed in the Reactor Vessel. The crew has completed preparing the Containment for Reactor Vessel venting. The candidate is required to calculate the maximum time the Reactor Vessel should be vented, using Attachment 1 of FRP-I-3, Response To Voids In Reactor Vessel. The calculation should be determined to the second to allow timing using the MCR timer.

This JPM has been modified by changing all values provided as initial conditions. The answer is now over one minute different than the original version with a tolerance of ± 5 seconds.

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

K/A 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 plant is operating at 50% power and the CRS will direct the candidate to complete OST-1036, Shutdown Margin Calculation Modes 1-5, Section 7.3, for the current plant conditions.

This JPM has been modified by changing all values provided as initial conditions and using current cycle curves will yield a different value of Shutdown margin.

2009B NRC RO A2 (Common) - Perform OP-111, Att. 3 Low Head SI Standby Lineup Checklist. (JPM ADM-024) Modified

K/A G2.2.15 - Knowledge of the process for controlling equipment configuration or status. (CFR: 41.10 / 43.3 / 45.13) RO 3.9 SRO 4.3

NOTE: The Simulator will be utilized for this Admin JPM.

The initial setup will have the plant in Mode 4 with the RHR System aligned for ECCS operation. Several of the components will be intentionally mispositioned for this lineup. The applicant will be assigned to perform an independent verification of OP-111, Residual Heat Removal System, Attachment 3 "Low Head Safety Injection Standby Lineup Checklist". They will be expected to identify all errors with the lineup and list the mis-positioned controls and valves in the remarks section of the procedure.

This JPM has been modified by selecting different mis-aligned components and not using any of the components that were originally selected.

2009B NRC RO Admin JPM Summary (continued)

2009B NRC RO A3 (Common) - Using Survey Maps, Simplified Drawings, Plant Maps and valve lists, determine stay times while performing a clearance activity (JPM ADM-100) New

*K/A 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 applicant will be supplied a survey map of a location in the RAB and a clearance mission to complete in this radioactive area. The location also contains one or more hot spots. They must determine the individual stay times for themselves and another Auxiliary Operator (AO) without exceeding the annual administrative dose limits. They will be provided Survey Maps, Simplified plant drawings to locate valves, Plant Maps of the area and a plant valve list to determine the location of the valves they will be hanging a clearance on. The given information will supply the accumulated annual whole body doses for themselves and the other AO who has recently worked for another utility. They must perform their calculations based on Progress Energy Administrative Dose Limits.

2009B NRC RO A4 - NOT SELECTED FOR RO

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ES-301

Administrative Topics Outline

Form ES-301-1

Facility: Harris Nuclear Plant Date of Examination: 11/30/2009
Examination Level: RO SRO Operating Test Number: 05000400/2009302

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	N, R	During a loss of shutdown cooling, determine the time that the RCS will reach core boiling and core boil-off conditions (JPM ADM-005) <i>K/A G2.1.20</i> 2009B NRC SRO A1-1
Conduct of Operations	M, R	Determine Boric Acid Addition Following Control Room Evacuation (JPM IP-049) <i>K/A G2.1.25</i> 2009B NRC SRO A1-2
Equipment Control	M, S	Perform OP-111, Att. 3 Low Head SI Standby Lineup Checklist. (JPM ADM-024) <i>K/A G2.2.15</i> 2009B NRC SRO A2
Radiation Control	N, R	Using Survey Maps, Simplified Drawings, Plant Maps and valve lists, determine stay times while performing a clearance activity (JPM ADM-100) <i>K/A G2.3.4</i> 2009B NRC SRO A3
Emergency Procedures/Plan	N, R	Given a set of conditions, Classify an Event (JPM ADM-099) <i>K/A G2.4.41</i> 2009B 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) (0)
(N)ew or (M)odified from bank (≥ 1) (5)
(P)revious 2 exams (≤ 1; randomly selected) (0)

2009B NRC SRO Admin JPM Summary

2009B NRC SRO A1-1 – During a loss of shutdown cooling, determine the time that the RCS will reach core boiling and core boil-off conditions. (SRO JPM ADM-005) New

*K/A G2.1.20 - Ability to interpret and execute procedure steps.
(CFR: 41.10 / 43.5 / 45.12) RO 4.6 SRO 4.6*

The applicant will be provided with initial plant conditions. A plant shutdown for refueling is in progress with the Reactor Vessel head off when a loss of RHR has occurred. The crew is implementing AOP-020, Loss of RCS Inventory or Residual Heat Removal While Shutdown. The SRO applicants must first determine which of the four plant curves to use (H-X-8 through H-X-11) and then calculate the time the RCS will reach core boiling and core boil-off.

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

*K/A 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.

This JPM has been modified by providing new initial conditions which leads to a new answer that is substantially different than the original.

2009B NRC SRO A2 (Common) - Perform OP-111, Att. 3 Low Head SI Standby Lineup Checklist. (JPM ADM-024) Modified

*K/A G2.2.15 - Knowledge of the process for controlling equipment configuration or status.
(CFR: 41.10 / 43.3 / 45.13) RO 3.9 SRO 4.3*

NOTE: The Simulator will be utilized for this Admin JPM.

The initial setup will have the plant in Mode 4 with the RHR System aligned for ECCS operation. Several of the components will be intentionally mispositioned for this lineup. The applicant will be assigned to perform an independent verification of OP-111, Residual Heat Removal System, Attachment 3 "Low Head Safety Injection Standby Lineup Checklist". They will be expected to identify all errors with the lineup and list the mis-positioned controls and valves in the remarks section of the procedure.

This JPM has been modified by selecting different mis-aligned components and not using any of the components that were originally selected.

2009B NRC SRO Admin JPM Summary (continued)

2009B NRC SRO A3 (Common) - Using Survey Maps, Simplified Drawings, Plant Maps and valve lists, determine stay times while performing a clearance activity. (JPM ADM-100)

*K/A 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 applicant will be supplied a survey map of a location in the RAB and a clearance mission to complete in this radioactive area. The location also contains one or more hot spots. They must determine the individual stay times for themselves and another Auxiliary Operator (AO) without exceeding the annual administrative dose limits. They will be provided Survey Maps, Simplified plant drawings to locate valves, Plant Maps of the area and a plant valve list to determine the location of the valves they will be hanging a clearance on. The given information will supply the accumulated annual whole body doses for themselves and the other AO who has recently worked for another utility. They must perform their calculations based on Progress Energy Administrative Dose Limits.

2009B NRC SRO A4 - Given a set of conditions, Classify an Event (JPM ADM-099) New

*K/A 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.

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ES-301

Control Room/In-Plant Systems Outline

Form ES-301-2

Facility: <u>Shearon Harris</u>		Date of Examination: <u>11/30/2009</u>
Exam Level: RO	SRO-I	SRO(U)
		Operating Test No.: <u>05000400/2009302</u>
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. Continuous Withdrawal of a Control Bank (at power) (AOP-001, Attachment 1) (JPM CR-048) <i>K/A APE 003 AA1.05</i>	A, D, S	1
b. Malfunction of RMU Control (AOP-003) (JPM CR-237) <i>K/A 004 A4.13</i>	A, N, S	2
c. Loss Of Service Water (Line Break) (AOP-022) (JPM CR-238) <i>K/A APE 062 AK3.03</i>	N, S	4S
d. Decreasing CCW Surge Tank Level (AOP-014) (JPM CR-044) <i>K/A APE 026 AA1.05</i>	A, D, S	8
e. Respond to High RCS Pressure at Power (AOP-019) (JPM CR-051) <i>K/A APE 027 AA2.16 RO ONLY</i>	A, D, S	3
f. Loss of All AC (EOP-EPP-001) (JPM CR-059) <i>K/A APE 056 AK3.02</i>	A, D, (EN), S	6
g. Startup the RHR System (OP-111) (JPM CR-023) <i>K/A 005 A4.01</i>	D, L, S	4P
h. Place an Excore NI Channel Out Of Service at Power (OWP-RP-26) (JPM CR-019) <i>K/A 015 A4.03</i>	D, S	7

Facility: Shearon Harris

Date of Examination: 11/30/2009

Exam Level: RO SRO-I **SRO(U)**

Operating Test No.: 05000400/2009302

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

<p>i. Restore Power To An Emergency Bus (OP-155) (JPM IP-238) K/A 068 AA1.10</p>	<p>E, EN, N</p>	<p>6</p>
<p>j. Transfer Control To the ACP (AOP-004) (JPM IP-050) K/A 068 AA1.21</p>	<p>D, E, L</p>	<p>7</p>
<p>k. Torque Shut The VCT Outlet Valves (AOP-017) (JPM IP-212) K/A 004 A1.06</p>	<p>A, D, E, R</p>	<p>2</p>

[@] 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 (6/5/3)
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4 (8/7/2)
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1 (3/3/2)
(EN)gineered safety feature	- / - / ≥ 1 (2/2/2)
(L)ow-Power / Shutdown	≥ 1 / ≥ 1 / ≥ 1 (2/2/2)
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1 (3/3/3)
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (0/0/0)
(R)CA	≥ 1 / ≥ 1 / ≥ 1 (1/1/1)
(S)imulator	

2009a NRC Control Room/In-Plant JPM Summary

JPM a – Continuous Withdrawal of a Control Bank (JPM CR-048) Alternate Path

*K/A APE 003 AA1.05 – Ability to operate and / or monitor the following as they apply to the Continuous Rod Withdrawal: Reactor trip switches
(CFR 41.7 / 45.5 / 45.6) RO 4.3 SRO 4.2*

The unit will be operating at ~50% power steady state conditions with the applicant maintaining current plant conditions. A failure of Tref will cause the rod control system to step out at maximum speed (72 steps per minute). The response to this condition will be to perform the immediate actions of AOP-001, Malfunction of Rod Control and Indication System. This will consist of a verification of less than 2 rods dropped (YES), then positioning the rod bank selector switch to manual. The next immediate action is to check that control bank motion has stopped. A second failure in the rod control system will cause the rods to continue to step out after they are placed in manual. The RNO will be to TRIP the Reactor and GO TO EOP Path-1. The applicant then performs the immediate actions of Path-1, verifies the Reactor and Turbine is tripped, SI is not required and power to the Emergency busses.

JPM b – Malfunction of Rx Makeup Control (JPM CR-237) Alternate Path - New

*K/A 004 A4.13 – Ability to manually operate and/or monitor in the control room: VCT level control and pressure control
(CFR: 41.7 / 45.5 to 45.8) RO 3.3 / SRO 2.9*

With the unit operating at 100% power steady state conditions, a VCT makeup was required when level reached the low level auto makeup setpoint of 20%. The makeup system malfunctioned and a makeup did not occur. When the operators attempted a manual makeup the Reactor Makeup Mode Selector switch stayed in the STOP position. AOP-003, Malfunction of Reactor Makeup Control was entered and the crew has performed steps 1-14 of section 3.2. The applicant will be directed to continue from this point. This will require the applicant to select from the procedure table what attachment to perform from the given conditions. After making the selection (Attachment 2) the applicant will have to calculate the amount of flow for a local manual makeup to the VCT based on current RCS boron concentration from the status board. They will then need to perform a lineup on the MCB and start a Boric Acid pump. Next they will have to coordinate the actions of a local operator to throttle open boration and dilution valves to the correct positions based on MCR indications until VCT level has reached 40% (normal full auto makeup setpoint).

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

JPM c – Loss of Service Water Line (line break) (JPM CR-238) New

*K/A APE 062 AK3.03 Knowledge of the operational implications of the following concepts as they apply to Loss of Instrument Air: Guidance actions contained in EOP for Loss of nuclear service water
(CFR 41.8 / 41.10 / 45.3) RO 4.0 SRO 4.2*

With the unit operating at 100% power steady state conditions a large service water leak occurs. The applicant will identify that the condition by MCB annunciators and notification from the RAB NLO. The applicant will be expected to verbalize the immediate actions of AOP-022, Loss of Service Water. They will be challenged with determining the appropriate section the procedure to transition into and then continue with the identification of the leak. They will be required to secure the running ESW pump on the ruptured header and maintain the pump in STOP until the discharge pressure is low enough to lock out the auto start feature.

JPM d – Decreasing CCW Surge Tank Level (JPM CR-044) Alternate Path

*K/A APE 026 AA1.05 – Ability to operate and / or monitor the following as they apply to the Loss of Component Cooling Water: The CCWS surge tank, including level control and level alarms, and radiation alarm
(CFR 41.7 / 45.5 / 45.6) RO 3.1 / SRO 3.1*

With the plant operating at 100% steady state the applicant will respond to a computer alarm for the Component Cooling Water systems. When the alarm is checked the applicant will identify that the CCW surge tank level is lower than normal. Soon after the first indication additional alarms will actuate indicating that the tank level is continuing on a lowering trend. The applicant is expected to recognize entry conditions for AOP-014, Loss of Component Cooling Water are met. The applicant will work through the procedure in attempts to maintain surge tank level and the running CCW pump in service. The leak size is large enough that level will not be maintained. IAW AOP-014 they must isolate charging flow and subsequently manually trip the Reactor.

JPM e – Respond to High RCS Pressure (JPM CR-051) RO ONLY

*K/A APE 027 AA2.16 Ability to determine and interpret the following as they apply to the Pressurizer Pressure Control Malfunctions: Actions to be taken if PZR pressure instrument fails low
(CFR: 43.5 / 45.13) RO 3.6 SRO 3.9*

With the plant operating at 100% steady state the applicant will respond to increasing RCS pressure which will be identified by MCB annunciators and Pressurizer pressure indications. The applicant is expected to recognize entry conditions are met for AOP-019, Malfunction of RCS Pressure Control and perform the immediate actions. This will require RNO actions to manually control the Pressurizer spray valves and control RCS pressure prior to reaching the auto Reactor protection actuation setpoint of 2385 psig.

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

JPM f - Loss of All AC Power- (JPM-CR-059) Alternate Path

K/A APE 056 AK 3.02 Knowledge of the reasons for the following responses as they apply to the Loss of Offsite Power: Actions contained in EOP for loss of offsite power (CFR 41.5,41.10 / 45.6 / 45.13) RO 4.4 SRO 4.7

With the plant at 100% power the applicant will be directed to maintain current plant conditions. Subsequently the Reactor will trip on a loss of all AC power. The applicant will be expected to perform the immediate actions associated with EOP-EPP-001, Loss of AC Power to 1A-SA and 1B-SB Buses. During the performance of this emergency procedure they will have to manipulate components that have failed to go to their expected position. They will also have to increase AFW flow to meet the minimum required flow rate and adjust the TDAFW pump speed control to obtain flow. All SG levels will be lower than required and flow will have to continue until adequate levels are being established.

JPM g – Startup the RHR System (JPM-CR-023)

K/A 010 A1.07 Ability to manually operate and/or monitor in the control room: Controls and indication for RHR pumps (CFR: 41.7 / 45.5 to 45.8) RO 3.6 SRO 3.4

The CRS has directed the applicant to initiate RCS cooling via the Train 'A' RHR pump per OP-111, Residual Heat Removal System Section 5.1. All prerequisites and initial conditions are met. The plant is being cooled down using Steam Dumps IAW GP-007, Normal Plant Cooldown Mode 3 to Mode 5. RCS temperature is 330°F and pressure is 325#. The applicant will start the 'A' RHR pump and place it in service to provide RCS cooling.

JPM h – Place an Excore NI Channel Out Of Service at Power (JPM CR-019)

K/A 015 A4.03 Ability to manually operate and/or monitor in the control room: Trip bypasses (CFR: 41.7 / 45.5 to 45.8) RO 3.8 SRO 3.9

Prior to taking watch, with the plant operating at 100% power steady state conditions, Nuclear Instrument 44 has failed low. The CRS has directed the applicant to remove NI-44 from service IAW OWP-RP-26, Reactor Protection. This will require placing rod control to manual. The applicant will then remove the detector from service at the detector current comparator drawer, the miscellaneous control and indication panel, and the comparator and rate drawer. Then contact I&C to lift leads from the circuit. They will then check the bistable status panels for proper responses. They will also have to log onto the ERFIS computer and remove the channel from scan. After removing the channel from scan they CRS will direct them to either place rod control in auto or remain manual control.

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

JPM i – Restore Power to an Emergency Bus (JPM IP-238) New

*K/A 068 AA1.10 Ability to operate and / or monitor the following as they apply to the Control Room Evacuation: Power distribution: ac and dc
(CFR 41.7 / 45.5 / 45.6) RO 3.7 / SRO 3.9*

Following a Main Control Room Evacuation due to a fire, Emergency Bus 'A' is not powered. The applicant will be directed to start and load 'A' Emergency Diesel locally IAW OP-155, Diesel Generator Emergency Power System section 8.13 and 8.14.

JPM j – Transfer Control to the ACP (JPM-IP-050)

*K/A 068 AA1.21 Ability to operate and / or monitor the following as they apply to the Control Room Evacuation: Transfer of controls from control room to shutdown panel or local control
(CFR 41.7 / 45.5 / 45.6) RO 3.9 / SRO 4.1*

The applicant informed that the plant was in Hot Standby at 557°F when a fire started in the Main Control Room. The Shift Manager has directed that the Control Room be evacuated. The Reactor has been tripped and the CRS has relocated to the ACP. The applicant will be directed by the CRS to perform a transfer of control to the ACP.

NOTE: This is a time critical JPM based on AOP-004 caution prior to the step for transferring control to the ACP - "Transfer to the ACP in the next two steps must be done as soon as possible to minimize spurious actuations caused by Control Room area fire. The transfer should be complete within 10 minutes."

JPM k – Torque Shut the VCT Outlet Valves (JPM IP-212) Alternate Path

*K/A 004 A1.06 Ability to predict and/or monitor changes in parameters
(to prevent exceeding design limits) associated with operating the CVCS controls
including: VCT level
(CFR: 41.5 / 45.5) RO 3.0 SRO 3.2*

With the plant operating at 100% steady state conditions an instrument air leak causes IA pressure to decrease. The crew has entered AOP-017, Loss of Instrument Air and air pressure continues to decrease. A Reactor Trip was required based on the continued decreasing IA pressure. The operators performed the actions of Path-1 and have transitioned to EPP-004, Reactor Trip Response while continuing the implementation of AOP-017. The RO has just identified that VCT level cannot be maintained > 5%. The RO will direct the applicant to perform the local operator actions of AOP-017 Section 3.2 step 2 RNO 2.c to realign RCP Seal return to the Charging Pump suction and step 3 RNO to locally torque shut the VCT outlet valves. **NOTE:** This JPM will be performed in the RCA.

DRAFT

ES-401, Rev. 9

PWR Examination Outline

Form ES-401-2

Facility: HARRIS		Date of Exam: 2010																
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	2				1	1				2	9	2	2	4	
	Tier Totals	5	4	5				4	4				5	27	5	5	10	
2. Plant Systems	1	2	3	2	1	2	3	3	3	3	3	3	28	2	3	5		
	2	1	1	0	1	1	1	1	1	1	1	1	10	1	2	3		
	Tier Totals	3	4	2	2	3	4	4	4	4	4	4	38	3	5	8		
3. Generic Knowledge and Abilities Categories				1		2		3		4		10		1	2	3	4	7
				2		2		3		3		2	2	1	2			

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

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
007EK3.01	Reactor Trip - Stabilization - Recovery / 1	4	4.6	<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"/>	Actions contained in EOP for reactor trip
008AK1.01	Pressurizer Vapor Space Accident / 3	3.2	3.7	<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"/>	Thermodynamics and flow characteristics of open or leak- ing valves
009EK1.02	Small Break LOCA / 3	3.5	4.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use of steam tables
011EG2.4.4	Large Break LOCA / 3	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 checked="" type="checkbox"/>	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.
015AK1.02	RCP Malfunctions / 4	3.7	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"/>	Consequences of an RCPS failure
022AA1.03	Loss of Rx Coolant Makeup / 2	3.2	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PZR level trend
025AK2.03	Loss of RHR System / 4	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"/>	Service water or closed cooling water pumps
027AK3.02	Pressurizer Pressure Control System Malfunction / 3	2.9	3	<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"/>	Verification of alternate transmitter and/or plant computer prior to shifting flow chart transmitters
029EA2.02	ATWS / 1	4.2	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"/>	Reactor trip alarm
038EG2.4.4	Steam Gen. Tube Rupture / 3	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 checked="" type="checkbox"/>	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.
040AA2.04	Steam Line Rupture - Excessive Heat Transfer / 4	4.5	4.7	<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"/>	Conditions requiring ESFAS initiation

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
056AA1.01	Loss of Off-site Power / 6	4	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"/>	Power relief controllers to maintain no-load T-ave
057AG2.1.23	Loss of Vital AC Inst. Bus / 6	4.3	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
058AA1.01	Loss of DC Power / 6	3.4	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Cross-tie of the affected dc bus with the alternate supply
062AA2.03	Loss of Nuclear Svc Water / 4	2.6	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The valve lineups necessary to restart the SWS while bypassing the portion of the system causing the abnormal condition
065AK3.03	Loss of Instrument Air / 8	2.9	3.4	<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"/>	Knowing effects on plant operation of isolating certain equipment from instrument air
WE04EK2.1	LOCA Outside Containment / 3	3.5	3.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.
WE05EK2.2	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.9	4.2	<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"/>	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.

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G												TOPIC:	
		RO	SRO														
001AA2.04	Continuous Rod Withdrawal / 1	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"/>	<input type="checkbox"/>	Reactor power and its trend	
003AK3.05	Dropped Control Rod / 1	3.4	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"/>	<input type="checkbox"/>	Tech-Spec limits for reduction of load to 50% power if flux cannot be brought back within specified target band	
005AG2.01 <i>G 2.1.20</i>	Inoperable/Stuck Control Rod / 1	3.8	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(multi-unit license) Knowledge of the design, procedural and operational differences between units. <i>single unit</i>		
024AK1.04	Emergency Boration / 1	2.8	3.6	<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"/>	Low temperature limits for boron concentration		
076AG2.1.25	High Reactor Coolant Activity / 9	3.9	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to interpret reference materials such as graphs, monographs and tables which contain performance data.		
WE03EK1.1	LOCA Cooldown - Depress. / 4	3.4	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"/>	Components, capacity, and function of emergency systems.		
WE06EK3.3	Degraded Core Cooling / 4	4.0	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Manipulation of controls required to obtain desired operating results during abnormal and emergency situations.		
WE15EK2.1	Containment Flooding / 5	2.8	2.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.		
WE16EA1.1	High Containment Radiation / 9	3.1	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.		

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G												TOPIC:			
		RO	SRO																
003K2.02	Reactor Coolant Pump	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CCW pumps
004A1.11	Chemical and Volume Control	3.0	3.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Letdown and charging flows
004K2.05	Chemical and Volume Control	2.7	2.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MOVs
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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RHR flow rate
005K5.03	Residual Heat Removal	2.9	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactivity effects of RHR fill water
006K6.13	Emergency Core Cooling	2.8	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pumps
007A1.03	Pressurizer Relief/Quench Tank	2.6	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Monitoring quench tank temperature
008K4.07 <i>K4.02</i>	Component Cooling Water	2.6	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operation of the CCW swing-bus power supply and its associated breakers and controls
010A3.01	Pressurizer Pressure Control	3.0	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PRT temperature and pressure during PORV testing
010K3.03	Pressurizer Pressure Control	4.0	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ESFAS
012A2.04	Reactor Protection	3.1	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Erratic power supply operation

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
013K2.01	Engineered Safety Features Actuation	3.6	3.8	<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"/>	ESFAS/safeguards equipment control
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
022A3.01	Containment Cooling	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Initia tion of safeguards mode of operation
026K3.01	Containment Spray	3.9	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"/>	CCS
039A4.04	Main and Reheat Steam	3.8	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Emergency feedwater pump turbines
059A3.02	Main Feedwater	2.9	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Programmed levels of the S/G
059A4.10 4.12	Main Feedwater	3.9	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ICS (No ICS)
061A2.03	Auxiliary/Emergency Feedwater	3.1	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"/>	Loss of dc power
062A2.03	AC Electrical Distribution	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"/>	Consequences of improper sequencing when transferring to or from an inverter
062G2.2.36	AC Electrical Distribution	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 checked="" type="checkbox"/>	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
063G2.2.40 G 2.2.22	DC Electrical Distribution	3.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of surveillance procedures.

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G											TOPIC:			
		RO	SRO															
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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Battery charger and battery
064K6.08	Emergency Diesel Generator	3.2	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fuel oil storage tanks
073K5.01	Process Radiation Monitoring	2.5	3.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Radiation theory, including sources, types, units and effects
076K1.01	Service Water	3.4	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CCW system
078G2.4.3 2.4.47	Instrument Air	3.7	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to identify post-accident instrumentation.
103A4.01	Containment	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flow control, pressure control and temperature control valves, including pneumatic valve controller

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G												TOPIC:					
		RO	SRO																		
001K2.05	Control Rod Drive	3.1	3.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	M/G sets
011K5.09	Pressurizer Level Control	2.6	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reason for manually controlling PZR level
014G2.4.21	Rod Position Indication	4.0	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Knowledge of the parameters and logic used to assess the status of safety functions
015A1.03	Nuclear Instrumentation	3.7	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NIS power indication
016A4.02 4.01	Non-nuclear Instrumentation	2.7	2.6	<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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Recorders
017A3.02	In-core Temperature Monitor	3.4	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Measurement of in-core thermocouple temperatures at panel outside control room
028A2.02	Hydrogen Recombiner and Purge Control	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 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"/>	LOCA condition and related concern over hydrogen
035K6.01	Steam Generator	3.2	3.6	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MSIVs
041K4.09	Steam Dump/Turbine Bypass Control	3.0	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Relationship of low/low T-ave. setpoint in SDS to primary cooldown
056K1.03	Condensate	2.6	2.6	<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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MFV

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
G2.1.20	Conduct of operations	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to execute procedure steps.
G2.1.38	Conduct of operations	3.7	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 the stations requirements for verbal communication when implementing procedures
G2.2.13	Equipment Control	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of tagging and clearance procedures.
G2.2.5	Equipment Control	2.2	3.2	<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 the process for making design or operating changes to the facility
G2.3.11	Radiation Control	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to control radiation releases.
G2.3.5	Radiation Control	2.9	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to use radiation monitoring systems
G2.3.6	Radiation Control	2.0	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to approve release permits
G2.4.2	Emergency Procedures/Plans	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 type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.
G2.4.38	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"/>	Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator.
G2.4.4	Emergency Procedures/Plans	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 which are entry-level conditions for emergency and abnormal operating procedures.

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G											TOPIC:				
		RO	SRO																
007EG2.4.45	Reactor Trip - Stabilization - Recovery / 1	4.1	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to prioritize and interpret the significance of each annunciator or alarm.
009EA2.11	Small Break LOCA / 3	3.8	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Containment temperature, pressure, and humidity
040AA2.01	Steam Line Rupture - Excessive Heat Transfer / 4	4.2	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Occurrence and location of a steam line rupture from pressure and flow indications
054AG2.2.40	Loss of Main Feedwater / 4	3.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to apply technical specifications for a system.
055EA2.02	Station Blackout / 6	4.4	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RCS core cooling through natural circulation cooling to S/G cooling
057AG2.2.4	Loss of Vital AC Inst. Bus / 6 <i>2.2.38 randomly selected</i>	3.6	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility. <i>Single Unit</i>

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
005AG2.2.4 <i>0.05A 2.2.1</i>	Inoperable/Stuck Control Rod / 1 <i>replace with</i>	3.6	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 checked="" type="checkbox"/>	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility. <i>single unit</i>
033AG2.4.30	Loss of Intermediate Range NI / 7	2.7	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of events related to system operations/status that must be reported to internal organizations or outside agencies.
061AA2.02	ARM System Alarms / 7	2.9	3.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Normal radiation intensity for each ARM system channel
WE10EA2.2	Natural Circ. With Seam Void/ 4	3.4	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"/>	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											
003G2.4.41	Reactor Coolant Pump	2.9	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the emergency action level thresholds and classifications.
005G2.4.34	Residual Heat Removal	4.2	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects
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 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
059A2.04	Main Feedwater	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"/>	Feeding a dry S/G
064G2.2.37	Emergency Diesel Generator	3.6	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 determine operability and/or availability of safety related equipment

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
033A2.01	Spent Fuel Pool Cooling	3.0	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"/>	Inadequate SDM
068G2.1.27	Liquid Radwaste	3.9	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of system purpose and or function.
<i>Change to</i> 071G2.1.31	Waste Gas Disposal	4.6	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"/>	Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup.

KA	NAME / SAFETY FUNCTION:	IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G													TOPIC:
		RO	SRO												
G2.1.28	Conduct of operations	4.1	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 the purpose and function of major system components and controls.
G2.1.44	Conduct of operations	3.9	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of RO duties in the control room during fuel handling.
G2.2.20	Equipment Control	2.6	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"/>	Knowledge of the process for managing troubleshooting activities.
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
G2.3.4	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
G2.4.16	Emergency Procedures/Plans	3.5	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 EOP implementation hierarchy and coordination with other support procedures or guidelines.
G2.4.20	Emergency Procedures/Plans	3.9	3.8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the RO's responsibilities in emergency plan implementation.

change to

G2.4.20