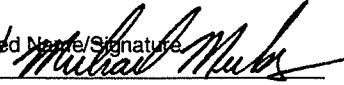
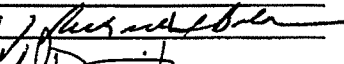
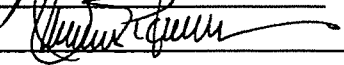


# WRITTEN EXAM SAMPLE PLAN ONLY.

ES-201

## Examination Outline Quality Checklist

Form ES-201-2

Facility: <b>H. B. ROBINSON</b>		Date of Examination: <b>FEBRUARY 2011</b>		
Item	Task Description	Initials		
		a	b*	c#
1. W R I T T E N	a. Verify that the outline(s) fit(s) the appropriate model, in accordance with ES-401.	M	N/A	JCB
	b. Assess whether the outline was systematically and randomly prepared in accordance with Section D.1 of ES-401 and whether all K/A categories are appropriately sampled.	M	N/A	JCB
	c. Assess whether the outline over-emphasizes any systems, evolutions, or generic topics.	M	N/A	JCB
	d. Assess whether the justifications for deselected or rejected K/A statements are appropriate.	M	N/A	JCB
2. S I M U L A T O R	a. Using Form ES-301-5, verify that the proposed scenario sets cover the required number of normal evolutions, instrument and component failures, technical specifications, and major transients.	<del> </del>	<del> </del>	<del> </del>
	b. Assess whether there are enough scenario sets (and spares) to test the projected number and mix of applicants in accordance with the expected crew composition and rotation schedule without compromising exam integrity, and ensure that each applicant can be tested using at least one new or significantly modified scenario, that no scenarios are duplicated from the applicants' audit test(s), and that scenarios will not be repeated on subsequent days.	<del> </del>	<del> </del>	<del> </del>
	c. To the extent possible, assess whether the outline(s) conform(s) with the qualitative and quantitative criteria specified on Form ES-301-4 and described in Appendix D.	<del> </del>	<del> </del>	<del> </del>
3. W / T	a. Verify that the systems walk-through outline meets the criteria specified on Form ES-301-2: (1) the outline(s) contain(s) the required number of control room and in-plant tasks distributed among the safety functions as specified on the form (2) task repetition from the last two NRC examinations is within the limits specified on the form (3) no tasks are duplicated from the applicants' audit test(s) (4) the number of new or modified tasks meets or exceeds the minimums specified on the form (5) the number of alternate path, low-power, emergency, and RCA tasks meet the criteria on the form.	<del> </del>	<del> </del>	<del> </del>
	b. Verify that the administrative outline meets the criteria specified on Form ES-301-1: (1) the tasks are distributed among the topics as specified on the form (2) at least one task is new or significantly modified (3) no more than one task is repeated from the last two NRC licensing examinations	<del> </del>	<del> </del>	<del> </del>
	c. Determine if there are enough different outlines to test the projected number and mix of applicants and ensure that no items are duplicated on subsequent days.	<del> </del>	<del> </del>	<del> </del>
4. G E N E R A L	a. Assess whether plant-specific priorities (including PRA and IPE insights) are covered in the appropriate exam sections.	M	N/A	JCB
	b. Assess whether the 10 CFR 55.41/43 and 55.45 sampling is appropriate.	M	N/A	JCB
	c. Ensure that K/A importance ratings (except for plant-specific priorities) are at least 2.5.	M	N/A	JCB
	d. Check for duplication and overlap among exam sections.	N/A	N/A	N/A
	e. Check the entire exam for balance of coverage.	M	N/A	JCB
	f. Assess whether the exam fits the appropriate job level (RO or SRO).	M	N/A	JCB
a. Author	<u>MICHAEL MECKS</u> / 		Date: <u>08/09/10</u>	
b. Facility Reviewer (*)	N/A			
c. NRC Chief Examiner (#)	<u>RICHARD S. BALDWIN</u> / 		Date: <u>01/17/2011</u>	
d. NRC Supervisor	<u>MALCOLM T. WIDMANN</u> / 		Date: <u>08/17/10</u>	
Note:	# Independent NRC reviewer initial items in Column "c"; chief examiner concurrence required. * Not applicable for NRC-prepared examination outlines			

Facility: H.B. ROBINSON		Date of Exam: FEBRUARY 2011																
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	1	1	2	N/A			2	2	N/A			1	9	2	2	4	
	Tier Totals	4	4	5	N/A			5	5	N/A			4	27	5	5	10	
2. Plant Systems	1	2	2	3	2	3	2	2	3	3	3	3	28	3	2	5		
	2	1	1	1	1	1	1	1	1	0	1	1	10	1	1	3		
	Tier Totals	3	3	4	3	4	3	3	4	3	4	4	38	5	3	8		
3. Generic Knowledge and Abilities Categories				1		2		3		4		10		1	2	3	4	7
				3		3		2		2				1	2	2	2	

- Note:
- 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).
  - 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.
  - 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/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 for guidance regarding the elimination of inappropriate K/A statements.
  - 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.
  - 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.
  - Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.
  - \* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.
  - 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.
  - 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																		
007EK2.02			Reactor Trip - Stabilization - Recovery / 1	2.6	2.8	<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"/>	Breakers, relays and disconnects
008AK2.03			Pressurizer Vapor Space Accident / 3	2.5	2.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Controllers and positioners
009EK3.23			Small Break LOCA / 3	4.2	4.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RCP tripping requirements
011EK1.01			Large Break LOCA / 3	4.1	4.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Natural circulation and cooling, including reflux boiling.
015AK1.04			RCP Malfunctions / 4	2.9	3.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Basic steady state thermodynamic relationship between RCS loops and S/Gs resulting from unbalanced RCS flow
015AK2.10			RCP Malfunctions / 4	2.8	2.8	<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"/>	RCP indicators and controls
022AA1.09			Loss of Rx Coolant Makeup / 2	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"/>	RCP seal flows, temperatures, pressures and vibrations
026AA1.06			Loss of Component Cooling Water / 8	2.9	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Control of flow rates to components cooled by the CCWS
029EG2.4.21			ATWS / 1	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 checked="" type="checkbox"/>	<input type="checkbox"/>	Knowledge of the parameters and logic used to assess the status of safety functions
040AK3.02			Steam Line Rupture - Excessive Heat Transfer / 4	4.4	4.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ESFAS initiation
054AA2.08			Loss of Main Feedwater / 4	2.9	3.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Steam flow-feed trend recorder



KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

001AA2.02	Continuous Rod Withdrawal / 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Position of emergency boration valve
036AK2.01	Fuel Handling Accident / 8	2.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fuel handling equipment
037AG2.4.9	Steam Generator Tube Leak / 3	3.8	<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"/>	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.
051AA1.04	Loss of Condenser Vacuum / 4	2.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Rod position
059AK3.02	Accidental Liquid RadWaste Rel. / 9	3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Implementation of E-plan
074EA2.07	Inad. Core Cooling / 4	4.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The difference between a LOCA and inadequate core cooling from trends and indicators
WE03EK1.1	LOCA Cooldown - Depress. / 4	3.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Components, capacity, and function of emergency systems.
WE14EA1.1	Loss of CTMT Integrity / 5	3.7	<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.
WE15EK3.1	Containment Flooding / 5	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"/>	Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature, pressure and reactivity changes and operating limitations and reasons for these operating characteristics.

KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

003A3.04	Reactor Coolant Pump	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	RCS flow
004A3.15	Chemical and Volume Control	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	PZR pressure and temperature
004K3.08	Chemical and Volume Control	3.6	<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"/>	RCP seal injection
005K3.07	Residual Heat Removal	3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Refueling operations
006A1.07	Emergency Core Cooling	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"/>	Pressure, high and low
006K6.10	Emergency Core Cooling	2.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Valves
007A1.03	Pressurizer Relief/Quench Tank	2.6	<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"/>	Monitoring quench tank temperature
007A2.01	Pressurizer Relief/Quench Tank	3.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stuck-open PORV or code safety
008K4.09	Component Cooling Water	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	The "standby" feature for the CCW pumps
010K5.02	Pressurizer Pressure Control	2.6	<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"/>	Constant enthalpy expansion through a valve
010K6.01	Pressurizer Pressure Control	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"/>	Pressure detection systems

TOPIC:

KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G

RO SRO

012A4.04 Reactor Protection 3.3 3.3            Bistable, trips, reset and test switches

013K5.01 Engineered Safety Features Actuation 2.8 3.2            Definitions of safety train and ESF channel

022A4.05 Containment Cooling 3.8 3.8            Containment readings of temperature, pressure and humidity system

026K2.01 Containment Spray 3.4 3.6            Containment spray pumps

039G2.4.20 Main and Reheat Steam 3.8 4.3            Knowledge of operational implications of EOP warnings, cautions and notes.

039G2.4.41 Main and Reheat Steam 2.9 4.6            Knowledge of the emergency action level thresholds and classifications.

059A3.02 Main Feedwater 2.9 3.1            Programmed levels of the S/G

061K5.01 Auxiliary/Emergency Feedwater 3.6 3.9            Relationship between AFW flow and RCS heat transfer

062K2.01 AC Electrical Distribution 3.3 3.4            Major system loads

063A2.01 DC Electrical Distribution 2.5 3.2            Grounds

063K4.02 DC Electrical Distribution 2.9 3.2            Breaker interlocks, permissives, bypasses and cross-ties.

KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

064A2.14	Emergency Diesel Generator	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Effects (verification) of stopping ED/G under load on isolated bus
073G2.4.18	Process Radiation Monitoring	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the specific bases for EOPs.
076K1.01	Service Water	3.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	CCW system
078K3.03	Instrument Air	3.0	<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"/>	<input type="checkbox"/>	Cross-tied units
103A4.01	Containment	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Flow control, pressure control and temperature control valves, including pneumatic valve controller
103K1.02	Containment	3.9	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Containment isolation/containment integrity



KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

001K3.01	Control Rod Drive	2.9	3.0	<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"/>	CVCS
015K2.01	Nuclear Instrumentation	3.3	3.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	NIS channels, components and interconnections
016K1.12	Non-nuclear Instrumentation	3.5	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"/>	S/G
028K5.04	Hydrogen Recombiner and Purge Control	2.6	3.2	<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"/>	The selective removal of hydrogen
034K6.02	Fuel Handling Equipment	2.6	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"/>	Radiation monitoring systems
041K4.09	Steam Dump/Turbine Bypass Control	3.0	3.3	<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"/>	<input type="checkbox"/>	Relationship of low/low T-ave. setpoint in SDS to primary cooldown
071A1.06	Waste Gas Disposal	2.5	2.8	<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"/>	Ventilation system
072G2.1.20	Area Radiation Monitoring	4.6	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ability to execute procedure steps.
075A2.03	Circulating Water	2.5	2.7	<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"/>	Safety features and relationship between condenser vacuum, turbine trip and steam dump
086A4.01	Fire Protection	3.3	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 checked="" type="checkbox"/>	<input type="checkbox"/>	Fire water pumps



KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

008AG2.1.23	Pressurizer Vapor Space Accident / 3	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 checked="" type="checkbox"/>	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
025AA2.01	Loss of RHR System / 4	2.7	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Proper amperage of running LPI/decay heat removal/RHR pump(s)
056AG2.4.4	Loss of Off-site Power / 6	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 checked="" type="checkbox"/>	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.
065AA2.01	Loss of Instrument Air / 8	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"/>	Cause and effect of low-pressure instrument air alarm
we04EG2.4.1	LOCA Outside Containment / 3	3.3	4.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the specific bases for EOPs.
WIE05EA2.1	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.4	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"/>	Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

033AA2.04 Loss of Intermediate Range NI / 7 3.2 3.6             Satisfactory overlap between source-range, intermediate-range and power-range instrumentation

060AG2.2.44 Accidental Gaseous Radwaste Rel. / 9 4.2 4.4             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

061AA2.03 ARM System Alarms / 7 3 3.3             Setpoints for alert and high alarms

we14EG2.4.47 Loss of CTMT Integrity / 5 4.2 4.2             Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.





KA NAME / SAFETY FUNCTION: IR K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

RO SRO

G2.1.15	Conduct of operations	2.7	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of administrative requirements for temporary management directives such as standing orders, night orders, Operations memos, etc.
G2.2.25	Equipment Control	3.2	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.
G2.2.7	Equipment Control	2.9	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the process for conducting special or infrequent tests
G2.3.15	Radiation Control	2.9	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of radiation monitoring systems
G2.3.5	Radiation Control	2.9	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to use radiation monitoring systems
G2.4.40	Emergency Procedures/Plans	2.7	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of the SRO's responsibilities in emergency plan implementation.
G2.4.44	Emergency Procedures/Plans	2.4	4.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of emergency plan protective action recommendations.

Facility: <u>H B Robinson</u>		Date of Examination: <u>2/28/11</u>
Examination Level: RO <u>X</u> SRO		Operating Test Number: _____
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	Perform Shutdown Margin calculation IAW FMP-012
Conduct of Operations	D, R	Calculate RCS Subcooling Margin IAW OP-307, Inadequate Core Cooling Monitor
Equipment Control	M, R	Complete AOP-035, S/G Tube Leak, Attachment 3 – Establishing RCS CSD Boron Concentration
Radiation Control	N, R	Determine the appropriate Radiation Work Permit for the assigned task and apply any limitations from the RWP
Emergency Procedures/Plan		N/A
NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.		
* Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes) (N)ew or (M)odified from bank ( $\geq 1$ ) (P)revious 2 exams ( $\leq 1$ ; randomly selected)		



## 2011 NRC RO Admin JPM Summary

**2011 NRC JPM Admin RO-SRO A1-1** – Perform Shutdown Margin calculation IAW FMP-012.

G2.1.37 Knowledge of the procedures, guidelines, or limitations associated with reactivity management. (CFR: 41.1 / 43.6 / 45.6) RO 4.3, SRO 4.6

The plant has experienced a dropped control rod. Reactor power has been reduced to less than 70% IAW AOP-001, Malfuction of Reactor Control System and stabilized. The candidate is expected to calculate the present shutdown margin IAW FMP-012, Manual Determination of Shutdown Margin Boron Concentration and determine whether the minimum amount of shutdown margin is currently present. **(Common for RO and SRO candidates)**

**2011 NRC JPM Admin RO A1-2** – Calculate RCS Subcooling Margin IAW OP-307, Inadequate Core Cooling Monitor.

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 candidate will be directed to manually calculate the RCS subcooling margin given the current plant parameters IAW OP-307, Inadequate Core Cooling Monitor. This task will use the applicable portions of the operating procedure and steam tables.

**2011 NRC JPM Admin RO A2** – Complete AOP-035, S/G Tube Leak, Attachment 3 - Establishing RCS CSD Boron Concentration.

G2.2.14 Knowledge of the process for controlling equipment configuration or status. (CFR: 41.10 / 43.3 / 45.13) RO 3.9, SRO 4.3

The candidate will be instructed to determine the boration requirements to place the plant in Mode 5 following the unit shutdown due to a S/G tube leak. The candidate must determine the conditions necessary to place the plant in Mode 5 and calculate the volume of boric acid necessary to borate the RCS to the stated conditions.

**2011 NRC JPM Admin RO-SRO A3** – Determine the appropriate Radiation Work Permit for the assigned task and apply any limitations from the RWP.

G2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. (CFR: 41.12 / 45.10) RO 3.5, SRO 3.6 (**Common for RO and SRO candidates**)

The candidate will be given a specific job task to perform valve alignment and draining operations on the Spent Fuel Pool Filter and three RWPs to choose from for the performance of the task. The candidate will be expected to apply all of the requirements specified within the RWP when choosing the proper one to cover the scope of work.

Facility: <u>H B Robinson</u>		Date of Examination: <u>2/28/11</u>
Examination Level: RO	SRO X	Operating Test Number: _____
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	Perform Shutdown Margin calculation IAW FMP-012
Conduct of Operations	M, R	Determine the Actions necessary to enter Mode 4 from Mode 5
Equipment Control	M, R	ITS Application for Misaligned Control Rod and Quadrant Power Tilt
Radiation Control	N, R	Determine the appropriate Radiation Work Permit for the assigned task and apply any limitations from the RWP
Emergency Procedures/Plan	M, R	Classify an Emergency Event
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 ( $\leq 3$ for ROs; $\leq 4$ for SROs & RO retakes) (N)ew or (M)odified from bank ( $\geq 1$ ) (P)revious 2 exams ( $\leq 1$ ; randomly selected)		

## 2011 NRC SRO Admin JPM Summary

### **2011 NRC JPM Admin RO-SRO A1-1 – Perform Shutdown Margin calculation IAW FMP-012**

G2.1.37 Knowledge of the procedures, guidelines, or limitations associated with reactivity management. (CFR: 41.1 / 43.6 / 45.6) RO 4.3, SRO 4.6

The plant has experienced a dropped control rod. Reactor power has been reduced to less than 70% IAW AOP-001, Malfunction of Reactor Control System and stabilized. The candidate is expected to calculate the present shutdown margin IAW FMP-012, Manual Determination of Shutdown Margin Boron Concentration and determine whether the minimum amount of shutdown margin is currently present. **(Common for RO and SRO candidates)**

### **2011 NRC JPM Admin SRO A1-2 – Determine the Actions necessary to enter Mode 4 from Mode 5.**

G2.1.23 Ability to perform specific system and integrated plant procedures during all modes of plant operation. (CFR: 41.10 / 43.5 / 45.2 / 45.6) RO 4.3, SRO 4.4

The candidate will be given a mode change checklist to transition the plant from Mode 5 into Mode 4. The initial conditions and mode change checklist will have inoperable equipment listed that prevents the mode change from occurring. The candidate will be expected to review the documentation and identify all of the degraded or inoperable equipment that must be returned to operable status prior to the plant mode change.

### **2011 NRC JPM Admin SRO A2 – ITS Application for Misaligned Control Rod and Quadrant Power Tilt,**

G2.2.40 Ability to apply Technical Specifications for a system. (CFR: 41.10 / 43.2 / 43.5 / 45.3) RO 3.4, SRO 4.7

The candidate will be given the plant conditions for a misaligned control rod which has caused the QPTR to exceed limits. The candidate is expected to apply the ITS requirements for the misaligned control rod and the excessive QPTR. Once the ITS requirements have been recognized for both, the candidate will prioritize which action has to be performed first and communicate the necessary log entries.

**2011 NRC JPM Admin RO-SRO A3** – Determine the appropriate Radiation Work Permit for the assigned task and apply any limitations from the RWP.

G2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. (CFR: 41.12 / 45.10) RO 3.5, SRO 3.6 (**Common for RO and SRO candidates**)

The candidate will be given a specific job task to perform valve alignment and draining operations on the Spent Fuel Pool Filter and three RWPs to choose from for the performance of the task. The candidate will be expected to apply all of the requirements specified within the RWP when choosing the proper one to cover the scope of work.

**2011 NRC JPM Admin SRO A4** – Classify an Emergency Event.

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

The candidate will be given the necessary plant conditions to classify that an emergency event has occurred IAW EPCLA-01, Emergency Control, and the EAL Matrices. This classification is required to be determined within 15 minutes of the onset of the event. Once the classification is communicated to the examiner, the candidate will be expected to fill out the Emergency Notification Form IAW EPNOT-01, CR/EOF Emergency Communicator, for communication to the state and counties within 15 minutes. Both portions of this JPM are time critical with a 15 minute completion criteria on each section.



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

**JPM A:** Perform an Emergency Boration IAW EPP-4.

K/A EPE 007 EA1.09 Ability to operate and monitor the following as they apply to a reactor trip: CVCS. (CFR: 41.7/ 45.5 / 45.6)

(Chemical and Volume Control System / 004) The candidate will recognize that 2 control rods did not trip into the core on the reactor trip and initiates emergency boration to borate the RCS to cold shutdown boron concentration. The boration pathways to the CVCS blender, Volume Control Tank and emergency boration valve are disabled, leaving only the RWST boration path to the Charging Pump suction as the remaining option. (CR-076 Bank JPM modified to leave one available boration path).

**JPM B:** Transfer to Long Term Recirculation IAW EPP-10.

K/A EPE 011 EA1.11 Ability to operate and monitor the following as they apply to a Large Break LOCA: Long-term cooling of core (CFR: 41.7 / 45.5 / 45.6)

(Emergency Core Cooling System / 006) Candidate will transfer to long term core cooling recirculation IAW EPP-10, Transfer to Long Term Recirculation, to establish hot leg injection flow. Failure of the RHR Pump discharge valve to the SI Pump suction to open and failure of the SI Hot Leg injection valve to RCS Loop C to open will require that alternate paths be established to provide the necessary flow paths. (CR-081 Bank JPM modified to include additional valve failure)

**JPM C:** Depressurize the RCS IAW DSP-003.

K/A 010 A4.03 Ability to manually operate and/or monitor in the control room: PORV and block valves. (CFR: 41.7 / 45.5 to 45.8)

(Pressurizer Pressure Control System (PZR PCS) / 010) Plant is in Mode 3 following a reactor trip due to loss of all 3 charging pumps due to a fire in the Charging Pump Room. The candidate will depressurize the Reactor Coolant System IAW DSP-003, Hot Shutdown from the Control Room with a Fire in the Charging Pump Room, using a PZR PORV and establish RCS inventory by controlling RCS pressure below the Safety Injection pump shutoff head to allow injection flow into the RCS. (New JPM written for 2011 exam)

**JPM D:** Respond to a tripped RHR Pump.

K/A APE 025 AA1.03 Ability to operate and / or monitor the following as they apply to the Loss of Residual Heat Removal System: LPI pumps. (CFR: 41.7 / 45.5 / 45.6)

(Residual Heat Removal System / 005) Plant is in Mode 5 with the Reactor Coolant System in reduced inventory when the operating RHR Pump trips. Candidate will enter AOP-020, Loss of Residual Heat Removal (Shutdown Cooling), and manipulate the system control valves prior to starting the standby RHR Pump. Control valves will be manipulated to restore RHR flow to the RCS. (2007 Audit Exam JPM)

**JPM E:** Isolate HVH Cooler leak inside the CV IAW FRP-J.2.

K/A EPE E15 EA1.1 Ability to operate and / or monitor the following as they apply to the (Containment Flooding): Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features. (CFR: 41.7 / 45.5 / 45.6)

(Containment System / 103) Plant has experienced a Large Break LOCA along with a Service Water leak on HVH-3 inside the Containment. Containment flooding occurs and results in the entry into procedure FRP-J.2, Response to Containment Flooding. The candidate will take the necessary actions in FRP-J.2 to stop and isolate the source of the Containment flooding. (2007 Audit Exam JPM)



**JPM F:** Restoration of Normal AC Power After Restoration of DC Bus A.

K/A 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)

(AC Electrical Distribution System / 062) Candidate will restore power after a loss of DC Bus A to the plant AC electrical busses IAW EPP-26, Loss of DC Bus A, Attachment 3. Power will be restored to 4KV Busses 1 and 2 and 480V Busses 1, 2A, 2B, 3, and E-1, which will restore power to the Startup Transformer cooling fans and oil pumps. (New JPM written for 2011 Exam)

**JPM G:** Loss of Source Ranges in Mode 3 during OST-001.

K/A 015 A3.03 Ability to monitor automatic operation of the NIS, including: Verification of proper functioning / operability (CFR: 41.7 / 45.5)

(Nuclear Instrumentation System/015) The plant is in Mode 3 with Source Range channel N-31 being tested for normal surveillance requirements prior to reactor startup. The failure of the high voltage power supplies to both Source Ranges will require the immediate opening of the reactor trip breakers IAW APP-005-A1, SR DET LOSS OF DC, annunciator actions and ITS 3.3.1-1, Item # 4, Condition J. (Previous NRC 2009 Exam)

**JPM H:** Fill the CCW Surge Tank to clear the low level alarm.

K/A 008 A4.07 Ability to manually operate and/or monitor in the control room: Control of minimum level in the CCWS surge tank. (CFR: 41.7 / 45.5)

(Component Cooling Water System (CCWS) / 008) Candidate will refill the CCW Surge Tank to normal operating level IAW OP-306, Component Cooling Water System, to clear the low level alarm. (CR-032 Bank JPM) **(RO ONLY)**

**JPM I:** Perform local actions to terminate liquid waste release IAW AOP-005, Attachment 17.

K/A 068 A2.04 Ability to (a) predict the impacts of the following malfunctions or operations on the Liquid Radwaste System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure of automatic isolation. (CFR: 41.5 / 43.5 / 45.3 / 45.13)

(Liquid Radwaste System (LRS) / 068) Candidate will simulate taking the local actions to terminate a liquid radwaste release IAW AOP-005, Radiation Monitoring System, Attachment 17. RCV-018 control valve will fail to close when demanded and local manual valves will require isolation to terminate the release path. (IP-015 Bank JPM)

**JPM J:** Align Deepwell Pumps as Backup Supply to AFW Pumps.

K/A 061G2.1.30 Ability to locate and operate components, including local controls. (CFR: 41.7 / 45.7)

(Auxiliary / Emergency Feedwater (AFW) System / 061) Candidate will simulate transferring the suction source for the Auxiliary Feedwater Pumps from the normal supply (Condensate Storage Tank) to the Deepwell Pump discharge header IAW OP-402, Auxiliary Feedwater System, Section 8.4.2. (IP-055 Bank JPM)

**JPM K:** Perform EPP-9 Attachment 1 for Local Cold Leg Recirculation Alignment.

006 K4.08 Knowledge of ECCS design feature(s) and/or interlock(s) which provide for the following: Recirculation flowpath of reactor building sump. (CFR: 41.7)

(Emergency Core Cooling System (ECCS) / 006) Candidate will simulate performing the local valve alignment in the Auxiliary Building (RCA) prior to the initiation of Containment Sump recirculation following a Large Break LOCA IAW EPP-9, Transfer to Cold Leg Recirculation, Attachment 1. (IP-038 Bank JPM)