

Facility: <i>Browns Ferry</i>		Date of Exam: <i>2010</i>															
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	4	3	3	N/A			4	3	N/A			3	20	3	4	7
	2	1	1	1	N/A			2	1	N/A			1	7	1	2	3
	Tier Totals	5	4	4	N/A			6	4	N/A			4	27	4	6	10
2. Plant Systems	1	3	2	2	3	1	2	3	2	3	3	2	26	2	3	5	
	2	1	1	1	1	1	1	1	1	2	1	1	12	0	1	2	3
	Tier Totals	4	3	3	4	2	3	4	3	5	4	3	38	3	5	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		

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												
295001G2.1.7	Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
295003G2.1.27	Partial or Complete Loss of AC / 6	3.9	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of system purpose and or function.
295004AA1.03	Partial or Total Loss of DC Pwr / 6	3.4	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	A.C. electrical distribution.....
295005AA2.08	Main Turbine Generator Trip / 3	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Electrical distribution status.....
295006AK3.03	SCRAM / 1	3.8	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"/>	Reactor pressure response.....
295016AA1.08	Control Room Abandonment / 7	4.0	4.0	<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"/>	Reactor pressure.....
295018AK3.07	Partial or Total Loss of CCW / 8	3.1	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"/>	Cross-connecting with backup systems.....
295019AA2.02	Partial or Total Loss of Inst. Air / 8	3.6	3.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Status of safety-related instrument air system loads (see AK2.1 - AK2.19).....
295021AK2.01	Loss of Shutdown Cooling / 4	3.6	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"/>	Reactor water temperature.....
295023AA1.05	Refueling Acc Cooling Mode / 8	2.8	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fuel transfer system: Plant-Specific.....
295024EK1.01	High Drywell Pressure / 5	4.1	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"/>	<input type="checkbox"/>	Drywell integrity: Plant-Specific.....

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
295025EK3.01	High Reactor Pressure / 3	4.2	4.3	<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"/>	Safety/relief valve opening.....
295026EA2.01	Suppression Pool High Water Temp. / 5	4.1	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Suppression pool water temperature.....
295028EK2.01	High Drywell Temperature / 5	3.7	4.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drywell spray: Mark-I&II.....
295030EK1.02	Low Suppression Pool Wtr Lvl / 5	3.5	3.8	<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"/>	Pump NPSH.....
295031EK1.02	Reactor Low Water Level / 2	3.8	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"/>	Natural circulation: Plant-Specific.....
295037EK2.13	SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1	3.4	4.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Alternate boron injection methods: Plant-Specific....
295038G2.4.9	High Off-site Release Rate / 9	3.8	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of low power / shutdown implications in accident (e.g. LOCA or loss of RHR) mitigation strategies.
600000AK1.02	Plant Fire On Site / 8	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"/>	Fire Fighting
700000AA1.03	Generator Voltage and Electric Grid Disturbancecs	3.8	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"/>	Voltatge regulator controls

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
295002AK2.02	Loss of Main Condenser Vac / 3	3.1	3.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Main turbine.....
295009AK1.05	Low Reactor Water Level / 2	3.3	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"/>	Natural circulation.....
295010AA1.06	High Drywell Pressure / 5	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"/>	<input type="checkbox"/>	Leakage detection systems.....
295022G2.2.38	Loss of CRD Pumps / 1	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"/>	Knowledge of conditions and limitations in the facility license.
295029EK3.03	High Suppression Pool Wtr Lvl / 5	3.4	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor SCRAM.....
295034EA1.02	Secondary Containment Ventilation High Radiation / 9	3.9	4.0	<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"/>	Process radiation monitoring system.....
295036EA2.01	Secondary Containment High Sump/Area Water Level / 5	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operability of components within the affected area..

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G												TOPIC:		
		RO	SRO															
203000A1.01	RHR/LPCI: Injection Mode	4.2	4.3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor water level
203000A1.04	RHR/LPCI: Injection Mode	3.6	3.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System pressure
205000K3.05	Shutdown Cooling	2.6	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fuel pool cooling assist: Plant-Specific
206000K2.02	HPCI	2.8	3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System pumps: BWR-2,3,4
209001K1.08	LPCS	3.2	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"/>	A.C. electrical power
211000A3.01	SLC	3.5	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pump discharge pressure: Plant-Specific
212000A2.09	RPS	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High containment/drywell pressure
215003A4.04	IRM	3.1	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	?IRM back panel switches, meters, and indicating lights
215003A4.05	IRM	3.4	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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Trip bypasses
215004G2.2.4	Source Range Monitor	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 checked="" type="checkbox"/>	<input type="checkbox"/>	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.
215005K4.01	APRM / LPRM	3.7	3.7	<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"/>	Rod withdrawal blocks

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
217000K6.04	RCIC	3.5	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Condensate storage and transfer system
218000K4.02	ADS	3.8	4.0	<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"/>	Allows manual initiation of ADS logic
218000K4.03	ADS	3.8	4.0	<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"/>	ADS logic control
223002K1.04	PCIS/Nuclear Steam Supply Shutoff	3.5	3.8	<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"/>	High pressure coolant injection: Plant-Specific
223002K1.08	PCIS/Nuclear Steam Supply Shutoff	3.4	3.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shutdown cooling system/RHR
239002K2.01	SRVs	2.8	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"/>	SRV solenoids
259002G2.2.40	Reactor Water Level Control	3.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to apply technical specifications for a system.						
261000A1.01	SGTS	2.9	3.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	System flow				
262001K5.02	AC Electrical Distribution	2.6	2.9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Breaker control
262002K3.08	UPS (AC/DC)	2.7	2.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Computer operation: Plant-Specific
263000A2.02	DC Electrical Distribution	2.6	2.9	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Loss of ventilation during charging					

KA	NAME / SAFETY FUNCTION:	IR	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO											
264000A3.02	EDGs	3.1	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimum time for load pick up				
264000A3.04	EDGs	3.1	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operation of the governor control system on frequency and voltage control				
300000A4.01	Instrument Air	2.6	2.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Pressure gauges				
400000K6.05	Component Cooling Water	3.0	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"/>	Pumps

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
201002A2.04	RMCS	3.2	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"/>	<input type="checkbox"/>	Control rod block
215002A3.04	RBM	3.6	3.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Verification or proper functioning/ operability: BWR-3,4,5
216000A1.02	Nuclear Boiler Inst.	2.9	3.1	<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"/>	<input type="checkbox"/>	Removing or returning a sensor (transmitter) to service
230000A4.04	RHR/LPCI: Torus/Pool Spray Mode	3.1	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Minimum flow valves
233000K2.02	Fuel Pool Cooling/Cleanup	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"/>	RHR pumps
234000K5.02	Fuel Handling Equipment	3.1	3.7	<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"/>	Fuel handling equipment interlocks
241000K6.06	Reactor/Turbine Pressure Regulator	3.8	3.9	<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"/>	Reactor pressure
268000K3.04	Radwaste	2.7	2.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drain sumps
272000A3.01	Radiation Monitoring	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"/>	<input type="checkbox"/>	Main steam isolation indications
286000G2.2.42	Fire Protection	3.9	4.6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
290002K1.12	Reactor Vessel Internals	3.4	3.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	SBLC

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

RO    SRO

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290003K4.01    Control Room HVAC      3.1    3.2                  System initiations/reconfiguration: Plant-Specific



KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G												TOPIC:		
		RO	SRO															
295004AA2.01	Partial or Total Loss of DC Pwr / 6	3.2	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"/>	<input type="checkbox"/>	Cause of partial or complete loss of D.C. power.....		
295016AA2.05	Control Room Abandonment / 7	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"/>	<input type="checkbox"/>	<input type="checkbox"/>	Drywell pressure.....		
295018G2.1.27	Partial or Total Loss of CCW / 8	3.9	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Knowledge of system purpose and or function.		
295021G2.4.47	Loss of Shutdown Cooling / 4	4.2	4.2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.		
295023G2.1.7	Refueling Acc Cooling Mode / 8	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.		
295024G2.1.31	High Drywell Pressure / 5	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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup.		
295028EA2.06	High Drywell Temperature / 5	3.4	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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Torus/suppression chamber air space temperature: Plant-Specific.....		

KA	NAME / SAFETY FUNCTION:	IR		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
		RO	SRO												
295010G2.2.4	High Drywell Pressure / 5	3.6	3.6	<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.							
295014AA2.01	Inadvertent Reactivity Addition / 1	4.1	4.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reactor power.....						
295033G2.2.39	High Secondary Containment Area Radiation Levels / 9	3.9	4.5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Knowledge of less than one hour technical specification action statements for systems.							

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G											TOPIC:					
		RO	SRO																	
203000A2.09	RHR/LPCI: Injection Mode	3.3	3.4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Inadequate system flow					
211000G2.1.7	SLC	4.4	4.7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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 evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
261000G2.2.4	SGTS	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"/>	<input type="checkbox"/>	(multi-unit) Ability to explain the variations in control board layouts, systems, instrumentation and procedural actions between units at a facility.
263000G2.1.28	DC Electrical Distribution	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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Knowledge of the purpose and function of major system components and controls.
400000A2.02	Component Cooling Water	2.8	3.0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	High/low surge tank level					

KA	NAME / SAFETY FUNCTION:	IR		K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G												TOPIC:					
		RO	SRO																		
215001G2.4.2	Traversing In-core Probe	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 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.
216000A2.06	Nuclear Boiler Inst.	2.9	3.1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Loss of power supply							
219000G2.4.41	RHR/LPCI: Torus/Pool Cooling Mode	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 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.



Facility: Browns Ferry NPP Date of Examination: 6/7/2010  
 Examination Level: RO Operating Test Number: 1006

Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations	N	2.1.5 Evaluate Work Schedule against guidelines of SPP 1.5 Fatigue Management and Work Hour Limits (jpm551)
Conduct of Operations	N	2.1.36 Complete SRM operability surveillance and determine if acceptance criteria is met for core alterations. (jpm554)
Equipment Control	M	2.2.38 Drywell Leakage Calculation (jpm556)
Radiation Control	P	2.3.12 Locked High Radiation Area Entry requirements (jpm548)
Emergency Plan		

**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
- (D)irect from bank ( $\leq 3$  for ROs;  $\leq 4$  for SROs and RO retakes)
- (N)ew or (M)odified from bank ( $\geq 1$ )
- (P)revious 2 exams ( $\leq 1$ ; randomly selected)
- (S)imulator

1. Evaluate Work Schedule for compliance with new fatigue management guidelines
  - New
  - SPP 1.5 Fatigue Management and Work Hour Limits
  - 2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc. Importance RO 2.9
  
2. Complete SRM operability surveillance and determine if acceptance criteria is met for core alterations.
  - New
  - 1-SR-3.3.1.2.4 Source Range Monitor System Count Rate and Signal to Noise Ratio Check
  - 2.1.36 Knowledge of procedures and limitations involved in core alterations. Importance RO 3.0
  
3. Drywell Leakage calculations per 2-SR-2 and determination of acceptance criteria
  - Modified
  - 2-SR-2 Instrument Checks and Observations
  - Handout 2-SR-2
  - 2.2.38 Knowledge of conditions and limitations in the facility license. Importance RO 3.6
  
4. Locked High Radiation Area Entry requirements
  - Previous
  - Handout JPM 548 RWP and Survey Map
  - SPP 5.1 Radiological Controls
  - 2.3.12 Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc. Importance RO 3.2

Facility: Browns Ferry NPP Date of Examination: 6/7/2010  
 Examination Level: SRO Operating Test Number: 1006

Administrative Topic (see Note)	Type Code *	Describe activity to be performed
Conduct of Operations	N	2.1.5 Evaluate Work Schedule against guidelines of SPP 1.5 Fatigue Management and Work Hour Limits (jpm551sro)
Conduct of Operations	N	2.1.18 NRC Event Notification due to Reactor Scram (jpm553)
Equipment Control	N	2.2.40 Controlling a containment penetration to meet the isolation requirements of TS 3.6.1.3 (jpm555)
Radiation Control	P	2.3.12 Locked High Radiation Area Entry requirements (jpm548)
Emergency Plan	N	2.4.44 Protective Action Recommendation Evaluation (jpm552)

**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
- (D)irect from bank ( $\leq 3$  for ROs;  $\leq 4$  for SROs and RO retakes)
- (N)ew or (M)odified from bank ( $\geq 1$ )
- (P)revious 2 exams ( $\leq 1$ ; randomly selected)
- (S)imulator

1. Evaluate Work Schedule for compliance with new fatigue management guidelines
  - New
  - SPP 1.5 Fatigue Management and Work Hour Limits
  - 2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc. Importance SRO 3.9
2. NRC Event Notification due to Reactor Scram
  - New
  - SPP 3.5 Regulatory Reporting Requirements
  - 2.1.18 Ability to make accurate, clear, and concise logs, records, status boards and reports. Importance SRO 3.8
3. Controlling a containment penetration to meet the isolation requirements of TS 3.6.1.3
  - New
  - Technical Specification 3.6.1.3
  - Drawing 2-47E811-1
  - SPP 10.2 Clearance Procedure to Safely Control Energy
  - 2.2.40 Ability to apply Technical Specifications for a system. Importance SRO 4.7
4. Locked High Radiation Area Entry requirements
  - Previous
  - Handout JPM 548 RWP and Survey Map
  - SPP 5.1 Radiological Controls
  - 2.3.12 Knowledge of radiological safety principles pertaining to licensed operator duties, such as containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc. Importance SRO 3.7
5. Protective Action Recommendation Evaluation
  - New
  - EPIP-1 and 5 Emergency Classification Procedure and General Emergency
  - Completed Notification Handout
  - 2.4.44 Knowledge of emergency plan protective action recommendations. Importance SRO 4.4

Facility: Browns Ferry NPP

Date of Examination: 6/7/2010

Exam Level: RO

Operating Test No.: 1006

**Control Room Systems<sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)**

System / JPM Title	Type Code*	Safety Function
a. Control Rod Exercise SR 3.1.3.2 (U2/U3)	M, A, S	1
b. Place a 2 <sup>nd</sup> /3 <sup>rd</sup> RFPT in service (U2/U3)	N, S	2
c. Close MSIV's during Power Operation (U2/U3)	N, S	3
d. Loss of Shutdown Cooling (U2/U3)	M, L, P, A, S	4
e. Returning an IRM to service from Bypass (U2/U3)	N, L, S	7
f. Return DW CAM to service after isolation (U2/U3)	EN, N, S	9
g. Secure Sys II from Suppression Pool Cooling (U2/U3)	N, S	5
h. Generator Synchronization and Load (U2/U3)	N, A, S	6

**In-Plant Systems<sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)**

i. Shutdown Unit 3 'A' DG at 4 KV Shutdown Board	N, E, A	6
j. Suppression Pool Water Inventory Removal App 18 (U1)	N, R, E	5
k. 0-SSI-2-1, ATTACHMENT 2	D, E, A	8

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

**Control Room Systems:****a. Control Rod Exercise SR 3.1.3.3 (80)**

- **Modified / Simulator / Alternate Path**
- 3-SR 3.1.3.3, Control Rod Test for Withdrawn Control Rods Rev. 28
- 3-AOI-85-5 Rod Drift In Rev 9
- 201002 Reactor Manual Control System A2.02 Ability to (a) predict the impacts of the following on the REACTOR MANUAL CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Rod Drift Alarm IMPORTANCE: RO 3.2 SRO 3.3

**b. Place RFPT 3C in Service (202)**

- **New / Simulator**
- 3-OI-3 Reactor Feedwater System Rev 79, Section 5.7
- 259001 Reactor Feedwater System A4.02 Ability to manually operate and/or monitor in the Control Room: Manually start/control a RFP/TDRFP IMPORTANCE: RO 3.9 SRO 3.7

**c. Close MSIV's during Power Operation (203)**

- **New / Simulator**
- 3-OI-1 Main Steam System Rev 29 Section 8.2
- 239001 Main and Reheat Steam System A4.01 Ability to manually operate and/or monitor in the control room: MSIV's IMPORTANCE: RO 4.2 SRO 4.0

**d. Loss of Shutdown Cooling (225)**

- **Modified from bank / Low-Power / Simulator / Previous Exam / Alternate Path**
- 3-AOI-74-1 Loss of Shutdown Cooling Rev 17
- 295021 Loss of Shutdown Cooling AA1.02 Ability to operate and/or monitor the following as they apply to Loss of Shutdown Cooling: RHR/shutdown cooling IMPORTANCE: RO 3.5 SRO 3.5

**e. Returning an IRM to service from Bypass (207)**

- **Low-Power / Simulator / New**
- -OI-92A IRM Rev 15 section 6.2
- 215003 IRM System A2.02 Ability to (a) predict the impacts of the following on the IRM System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: IRM inop condition IMPORTANCE: RO 3.5 SRO 3.7

**f. Return DW Cam to Service after isolation (208)**

- **New / Simulator / Engineered Safety Feature**
- 3-AOI-100-1 Reactor Scram Rev 51 step 37
- 272000 Radiation Monitoring System A2.10 Ability to (a) predict the impacts of the following on the Radiation Monitoring System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: LOCA IMPORTANCE: RO 3.9 SRO 4.1

**g. Secure System II from Suppression Pool Cooling (209)**

- **New / Simulator**
- 3-EOI Appendix 17A RHR System Operation Suppression Pool Cooling, Rev 5
- 219000 RHR/LPCI: Torus Suppression Pool Cooling Mode A4.01 Ability to manually operate and/or monitor in the control room: Pumps IMPORTANCE: RO 3.8 SRO 3.7

**h. Generator Synchronization and Load (210)**

- **New / Alternate Path / Simulator**
- 3-OI-47 Turbine Generator System, Rev. 84, Section 5.5
- 3-ARP-9-7B 3-XA-55-7B Rev 22 Window 32
- 262001 AC Electrical Distribution A4.04 Ability to manually operate and/or monitor in the control room: Synchronizing and paralleling of different AC Supplies IMPORTANCE: RO 3.6 SRO 3.7

**In-Plant Systems:****i. Shutdown Unit 3 A DG from the 4KV Shutdown Board (211)**

- **New / Emergency or Abnormal In-Plant / Alternate Path**
- 3-OI-82, Standby Diesel Generator System, Rev. 88, Section 7.3 and 7.5
- 264000 Emergency Generators K4.07 Knowledge of Emergency Generators design features and/or interlocks for the following: Local operation and control IMPORTANCE: RO 3.3 SRO 3.4

**j. Suppression Pool Water Inventory Removal 1-EOI-Appendix 18 (212)**

- **New / RCA Entry / Emergency or Abnormal In-Plant**
- 1-EOI-Appendix 18, Rev. 0
- 295029 High Suppression Pool Water Level EK2.01 Knowledge of the interrelations between High Suppression Pool Water Level and the following: RHR/LPCI IMPORTANCE: RO 3.0 SRO 3.3

**k. 0-SSI-2-1, ATTACHMENT 2 (127)**

- Bank / **E**mergency or Abnormal In-Plant / **A**lternate Path
- 0-SSI-2-1 Rev 7
- 600000 Plant Fire on Site AA2.16 Ability to determine and interpret the following as they apply to Plant Fire on Site: Vital equipment and control systems to be maintained and operated during a fire **IMPORTANCE: RO 3.0 SRO 3.5**

Facility: Browns Ferry NPP

Date of Examination: 6/7/2010

Exam Level: SRO-U

Operating Test No.: 1006

**Control Room Systems<sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)**

System / JPM Title	Type Code*	Safety Function
a. Control Rod Exercise SR 3.1.3.2 (U2/U3)	M, A, S	1
d. Loss of Shutdown Cooling (U2/U3)	M, L, P, A, S	4
f. Return DW CAM to service after isolation (U2/U3)	EN, N, S	9

**In-Plant Systems<sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)**

j. Suppression Pool Water Inventory Removal App 18 (U1)	N, R, E	5
k. 0-SSI-2-1, ATTACHMENT 2	D, E, A	8

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

**Control Room Systems:****a. Control Rod Exercise SR 3.1.3.3 (80)**

- Modified / Simulator / Alternate Path
- 3-SR 3.1.3.3, Control Rod Test for Withdrawn Control Rods Rev. 28
- 3-AOI-85-5 Rod Drift In Rev 9
- 201002 Reactor Manual Control System A2.02 Ability to (a) predict the impacts of the following on the REACTOR MANUAL CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Rod Drift Alarm IMPORTANCE: RO 3.2 SRO 3.3

**d. Loss of Shutdown Cooling (225)**

- Modified from bank / Low-Power / Simulator / Previous Exam / Alternate Path
- 3-AOI-74-1 Loss of Shutdown Cooling Rev 17
- 295021 Loss of Shutdown Cooling AA1.02 Ability to operate and/or monitor the following as they apply to Loss of Shutdown Cooling: RHR/shutdown cooling IMPORTANCE: RO 3.5 SRO 3.5

**f. Return DW Cam to Service after isolation (208)**

- New / Simulator / Engineered Safety Feature
- 3-AOI-100-1 Reactor Scram Rev 51 step 37
- 272000 Radiation Monitoring System A2.10 Ability to (a) predict the impacts of the following on the Radiation Monitoring System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: LOCA IMPORTANCE: RO 3.9 SRO 4.1

**In-Plant Systems:****j. Suppression Pool Water Inventory Removal 1-EOI-Appendix 18 (212)**

- New / RCA Entry / Emergency or Abnormal In-Plant
- 1-EOI-Appendix 18, Rev. 0
- 295029 High Suppression Pool Water Level EK2.01 Knowledge of the interrelations between High Suppression Pool Water Level and the following: RHR/LPCI IMPORTANCE: RO 3.0 SRO 3.3

**k. 0-SSI-2-1, ATTACHMENT 2 (127)**

- Bank / **E**mergency or Abnormal In-Plant / **A**lternate Path
- 0-SSI-2-1 Rev 7
- 600000 Plant Fire on Site AA2.16 Ability to determine and interpret the following as they apply to Plant Fire on Site: Vital equipment and control systems to be maintained and operated during a fire **IMPORTANCE: RO 3.0 SRO 3.5**

Facility: Browns Ferry NPP

Date of Examination: 6/7/2010

Exam Level: SRO-I

Operating Test No.: 1006

**Control Room Systems<sup>@</sup> (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)**

System / JPM Title	Type Code*	Safety Function
a. Control Rod Exercise SR 3.1.3.2 (U2/U3)	M, A, S	1
b. Place a 2 <sup>nd</sup> /3 <sup>rd</sup> RFPT in service (U2/U3)	N, S	2
c. Close MSIV's during Power Operation (U2/U3)	N, S	3
d. Loss of Shutdown Cooling (U2/U3)	M, L, P, A, S	4
e. Returning an IRM to service from Bypass (U2/U3)	N, L, S	7
f. Return DW CAM to service after isolation (U2/U3)	EN, N, S	9
h. Generator Synchronization and Load (U2/U3)	N, A, S	6

**In-Plant Systems<sup>@</sup> (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)**

i. Shutdown Unit 3 'A' DG at 4 KV Shutdown Board	N, E, A	6
j. Suppression Pool Water Inventory Removal App 18 (U1)	N, R, E	5
k. 0-SSI-2-1, ATTACHMENT 2	D, E, A	8

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

**Control Room Systems:****a. Control Rod Exercise SR 3.1.3.3 (80)**

- **Modified / Simulator / Alternate Path**
- 3-SR 3.1.3.3, Control Rod Test for Withdrawn Control Rods Rev. 28
- 3-AOI-85-5 Rod Drift In Rev 9
- 201002 Reactor Manual Control System A2.02 Ability to (a) predict the impacts of the following on the REACTOR MANUAL CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Rod Drift Alarm IMPORTANCE: RO 3.2 SRO 3.3

**b. Place RFPT 3C in Service (202)**

- **New / Simulator**
- 3-OI-3 Reactor Feedwater System Rev 79, Section 5.7
- 259001 Reactor Feedwater System A4.02 Ability to manually operate and/or monitor in the Control Room: Manually start/control a RFP/TDRFP IMPORTANCE: RO 3.9 SRO 3.7

**c. Close MSIV's during Power Operation (203)**

- **New / Simulator**
- 3-OI-1 Main Steam System Rev 29 Section 8.2
- 239001 Main and Reheat Steam System A4.01 Ability to manually operate and/or monitor in the control room: MSIV's IMPORTANCE: RO 4.2 SRO 4.0

**d. Loss of Shutdown Cooling (225)**

- **Modified from bank / Low-Power / Simulator / Previous Exam / Alternate Path**
- 3-AOI-74-1 Loss of Shutdown Cooling Rev 17
- 295021 Loss of Shutdown Cooling AA1.02 Ability to operate and/or monitor the following as they apply to Loss of Shutdown Cooling: RHR/shutdown cooling IMPORTANCE: RO 3.5 SRO 3.5

**e. Returning an IRM to service from Bypass (207)**

- **Low-Power / Simulator / New**
- 3-OI-92A IRM Rev 15 section 6.2
- 215003 IRM System A2.02 Ability to (a) predict the impacts of the following on the IRM System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: IRM inop condition IMPORTANCE: RO 3.5 SRO 3.7

**f. Return DW Cam to Service after isolation (208)**

- **New / Simulator / Engineered Safety Feature**
- 3-AOI-100-1 Reactor Scram Rev 51 step 37
- 272000 Radiation Monitoring System A2.10 Ability to (a) predict the impacts of the following on the Radiation Monitoring System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: LOCA IMPORTANCE: RO 3.9 SRO 4.1

**h. Generator Synchronization and Load (210)**

- **New / Alternate Path / Simulator**
- 3-OI-47 Turbine Generator System, Rev. 84, Section 5.5
- 3-ARP-9-7B 3-XA-55-7B Rev 22 Window 32
- 262001 AC Electrical Distribution A4.04 Ability to manually operate and/or monitor in the control room: Synchronizing and paralleling of different AC Supplies IMPORTANCE: RO 3.6 SRO 3.7

**In-Plant Systems:****i. Shutdown Unit 3 A DG from the 4KV Shutdown Board (211)**

- **New / Emergency or Abnormal In-Plant / Alternate Path**
- 3-OI-82, Standby Diesel Generator System, Rev. 88, Section 7.3 and 7.5
- 264000 Emergency Generators K4.07 Knowledge of Emergency Generators design features and/or interlocks for the following: Local operation and control IMPORTANCE: RO 3.3 SRO 3.4

**j. Suppression Pool Water Inventory Removal 1-EOI-Appendix 18 (212)**

- **New / RCA Entry / Emergency or Abnormal In-Plant**
- 1-EOI-Appendix 18, Rev. 0
- 295029 High Suppression Pool Water Level EK2.01 Knowledge of the interrelations between High Suppression Pool Water Level and the following: RHR/LPCI IMPORTANCE: RO 3.0 SRO 3.3

**k. 0-SSI-2-1, ATTACHMENT 2 (127)**

- **Bank / Emergency or Abnormal In-Plant / Alternate Path**
- 0-SSI-2-1 Rev 7
- 600000 Plant Fire on Site AA2.16 Ability to determine and interpret the following as the apply to Plant Fire on Site: Vital equipment and control systems to be maintained and operated during a fire IMPORTANCE: RO 3.0 SRO 3.5