Facility: R. E. Ginna

Date Of Exam: 09/05/2008

Tier	Group	RO K/A Category Points												SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	A2			G*	Total
1. Emergency & Abnormal Plant Evolutions	1	3	2	4	N/A			3	3	N/A		3	18	0			0	0
	2	1	2	1				2	2			1	9	0			0	0
	Tier Totals	4	4	5				5	5			4	27	0			0	0
2. Plant Systems	1	3	2	3	3	2	2	2	3	3	2	3	28	0			0	0
	2	1	1	1	1	1	1	1	0	1	1	1	10	0		0	0	0
	Tier Totals	4	3	4	4	3	3	3	3	4	3	4	38	0			0	0
3. Generic Knowledge And Abilities Categories		1			2			3		4			10	1	2	3	4	0
		3			2			2		3				0	0	0	0	

Note:

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/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.

4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.

5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.

6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.

7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.

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.

PWR RO Examination Outline

Facility: R. E. Ginna

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000007 Reactor Trip - Stabilization - Recovery / 1	X						EK1.04 - Decrease in reactor power following reactor trip (prompt drop and subsequent decay)	3.6	1
000008 Pressurizer Vapor Space Accident / 3					X		AA2.12 - PZR level indicators	3.4	1
000009 Small Break LOCA / 3			X				EK3.23 - RCP tripping requirements	4.2	1
000011 Large Break LOCA / 3				X			EA1.06 – D/Gs	4.2	1
000022 Loss of Rx Coolant Makeup / 2				X			AA1.08 - VCT level	3.4	1
000025 Loss of RHR System / 4	X						AK1.01 - Loss of RHRS during all modes of operation	3.9	1
000027 Pressurizer Pressure Control System Malfunction / 3		X					AK2.03 - Controllers and positioners	2.6	1
000038 Steam Gen. Tube Rupture / 3						X	2.4.18 Knowledge of the specific bases for EOPs.	3.3	1
000040 Steam Line Rupture - Excessive Heat ansfer / 4	X						AK1.05 - Reactivity effects of cooldown	4.1	1
000054 Loss of Main Feedwater / 4			X				AK3.01 - Reactor and/or turbine trip, manual and automatic	4.1	1
000055 Station Blackout / 6					X		EA2.01 - Existing valve positioning on a loss of instrument air system	3.4	1
000056 Loss of Off-site Power / 6						X	2.4.50 - Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	4.2	1
000057 Loss of Vital AC Inst. Bus / 6			X				AK3.01 - Actions contained in EOP for loss of vital ac electrical instrument bus	4.1	1
000062 Loss of Nuclear Svc Water / 4			X				AK3.03 - Guidance actions contained in EOP for Loss of nuclear service water	4.0	1
000065 Loss of Instrument Air / 8						X	2.4.6 - Knowledge of EOP mitigation strategies.	3.7	1
000077 Generator Voltage and Electric Grid Disturbances / 6					X		AA2.01 - Operating point on the generator capability curve	3.5	1
W/E04 LOCA Outside Containment / 3				X			EA1.2 - Operating behavior characteristics of the facility	3.6	1
W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4		X					EK2.2 - Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility	3.9	1

PWR RO Examination Outline

Facility: R. E. Ginna

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

F/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
K/A Category Totals:	3	2	4	3	3	3	Group Point Total:		18

PWR RO Examination Outline

Facility: R. E. Ginna

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

'APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000003 Dropped Control Rod / 1			X				AK3.05 - Tech-Spec limits for reduction of load to 50% power if flux cannot be brought back within specified target band	3.4*	1
000033 Loss of Intermediate Range NI / 7						X	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.3	1
000051 Loss of Condenser Vacuum / 4					X		AA2.02 - Conditions requiring reactor and/or turbine trip	3.9	1
000068 Control Room Evac. / 8		X					AK2.01 - Auxiliary shutdown panel layout	3.9	1
W/E02 SI Termination / 3					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.5	1
W/E03 LOCA Cooldown - Depress. / 4				X			EA1.2 - Operating behavior characteristics of the facility	3.7	1
W/E08 RCS Overcooling - PTS / 4		X					EK2.2 - Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility	3.6	1
W/E10 Natural Circ. / 4	X						EK1.3 - Annunciators and conditions indicating signals, and remedial actions associated with the Natural Circulation with Steam Void in Vessel with/without RVLIS	3.3	1
W/E16 High Containment Radiation / 9				X			EA1.2 - Operating behavior characteristics of the facility	2.9	1
K/A Category Totals:	**1**	**2**	**1**	**2**	**2**	**1**	**Group Point Total:**		**9**

PWR RO Examination Outline

Facility: R. E. Ginna

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

s/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
003 Reactor Coolant Pump						X						K6.04 - Containment isolation valves affecting RCP operation	2.8	1
003 Reactor Coolant Pump										X		A4.03 - RCP lube oil and lift pump motor controls	2.8	1
004 Chemical and Volume Control			X									K3.01 - CRDS (automatic)	2.5*	1
005 Residual Heat Removal						X						K6.03 - RHR heat exchanger	2.5	1
006 Emergency Core Cooling					X							K5.05 - Effects of pressure on a solid system	3.4	1
007 Pressurizer Relief/Quench Tank			X									K3.01 - Containment	3.3	1
008 Component Cooling Water		X										K2.02 - CCW pump, including emergency backup	3.0*	1
010 Pressurizer Pressure Control				X								K4.01 - Spray valve warm-up	2.7	1
012 Reactor Protection						X						K6.06 – Sensors and detectors	2.7*	1
013 Engineered Safety Features Actuation	X											K1.08 - CCWS	3.6	1
022 Containment Cooling									X			A3.01 - Initiation of safeguards mode of operation	4.1	1
2 Containment Cooling							X					A1.04 - Cooling water flow	3.2	1
026 Containment Spray							X					A1.02 - Containment temperature	3.6*	1
039 Main and Reheat Steam					X							K5.08 - Effect of steam removal on reactivity	3.6	1
059 Main Feedwater			X									K3.04 - RCS	3.6	1
061 Auxiliary/Emergency Feedwater											X	2.2.42 - Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9	1
061 Auxiliary/Emergency Feedwater	X											K1.07 - Emergency water source	3.6	1
062 AC Electrical Distribution				X								K4.02 - Circuit breaker automatic trips	2.5	1
062 AC Electrical Distribution									X			A3.05 - Safety-related indicators and controls	3.5	1
063 DC Electrical Distribution		X										K2.01 - Major DC loads	2.9*	1
064 Emergency Diesel Generator								X				A2.13 - Consequences of opening auxiliary feeder bus (ED/G sub supply)	2.6*	1
073 Process Radiation Monitoring								X				A2.02 - Detector failure	2.7	1
073 Process Radiation Monitoring											X	2.4.45 - Ability to prioritize and interpret the	4.1	1

PWR RO Examination Outline

Facility: R. E. Ginna

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic significance of each annunciator or alarm.	Imp.	Points
076 Service Water											X	2.1.27 - Knowledge of system purpose and/or function.	3.9	1
076 Service Water								X				A2.01 - Loss of SWS	3.5*	1
078 Instrument Air				X								K4.01 - Manual/automatic transfers of control	2.7	1
078 Instrument Air										X		A4.01 - Pressure gauges	3.1	1
103 Containment	X											K1.02 - Containment isolation/containment integrity	3.9	1
K/A Category Totals:	**3**	**2**	**3**	**3**	**2**	**3**	**2**	**3**	**2**	**2**	**3**	**Group Point Total:**		**28**

PWR RO Examination Outline

Facility: R. E. Ginna

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

's/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
002 Reactor Coolant	X											K1.07 - RVLIS	3.5*	1
015 Nuclear Instrumentation			X									K3.01 - RPS	3.9	1
017 In-core Temperature Monitor					X							K5.02 - Saturation and subcooling of water	3.7	1
034 Fuel Handling Equipment						X						A3.01 – Travel limits	2.5*	1
041 Steam Dump/Turbine Bypass Control									X			A3.03 - Steam flow	2.7	1
045 Main Turbine Generator											X	2.2.44 - Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.	4.2	1
071 Waste Gas Disposal										X		A4.09 – Waste Gas release rad monitors	3.3	1
072 Area Radiation Monitoring							X					A1.01 - Radiation levels	3.4	1
075 Circulating Water		X										K2.03 - Emergency/essential SWS pumps	2.6*	1
086 Fire Protection				X								K4.03 - Detection and location of fires	3.1	1
K/A Category Totals:	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**1**	**1**	**1**	**Group Point Total:**		**10**

Generic Knowledge and Abilities Outline (Tier 3)

PWR RO Examination Outline

Facility: R. E. Ginna

Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.15	Knowledge of administrative requirements for temporary management directives, such as standing orders, night orders, Operations memos, etc.	2.7	1
	2.1.20	Ability to interpret and execute procedure steps.	4.6	1
	2.1.40	Knowledge of refueling administrative requirements.	2.8	1
		Category Total:		3
Equipment Control	2.2.13	Knowledge of tagging and clearance procedures.	4.1	1
	2.2.42	Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	3.9	1
		Category Total:		2
Radiation Control	2.3.11	Ability to control radiation releases..	3.8	1
	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.	3.2	1
		Category Total:		2
Emergency Procedures/Plan	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	3.6	1
	2.4.37	Knowledge of the lines of authority during implementation of the emergency plan.	3.0	1
	2.4.39	Knowledge of RO responsibilities in emergency plan implementation.	3.9	1
		Category Total:		3
		Generic Total:		10

Facility: R. E. Ginna

Date Of Exam: 09/05/2008

Tier	Group	RO K/A Category Points												SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	A2			G*	Total
1. Emergency & Abnormal Plant Evolutions	1	0	0	0	N/A			0	0	N/A		0	0	2			4	6
	2	0	0	0				0	0			0	0	2			2	4
	Tier Totals	0	0	0				0	0			0	0	4			6	10
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	3			2	5
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2		1	3
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	5			3	8
3. Generic Knowledge And Abilities Categories		1			2			3			4		0	1	2	3	4	7
		0			0			0			0			2	2	1	2	

Note:

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/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.

4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.

5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.

6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.

7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. Refer to Section D.1.b of ES-401 for the applicable K/As.

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.

PWR SRO Examination Outline

Facility: R. E. Ginna

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1** **Form ES-401-2**

\PE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000015/000017 RCP Malfunctions / 4					X		AA2.10 - When to secure RCPs on loss of cooling or seal injection	3.7	1
000026 Loss of Component Cooling Water / 8						X	2.2.37 - Ability to determine operability and/or availability of safety related equipment.	4.6	1
000029 ATWS / 1						X	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.4	1
000058 Loss of DC Power / 6						X	2.1.20 - Ability to interpret and execute procedure steps.	4.6	1
W/E11 Loss of Emergency Coolant Recirc. / 4					X		EA2.1 - Facility conditions and selection of appropriate procedures during abnormal and emergency operations.	4.2	1
W/E12 - Steam Line Rupture - Excessive Heat Transfer / 4						X	2.1.7 - Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.7	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**2**	**4**	**Group Point Total:**		**6**

PWR SRO Examination Outline

Facility: R. E. Ginna

ES - 401 **Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2** **Form ES-401-2**

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000036 Fuel Handling Accident / 8						X	2.4.41 - Knowledge of the emergency action level thresholds and classifications.	4.6	1
000037 Steam Generator Tube Leak / 3						X	2.1.20 - Ability to interpret and execute procedure steps.	4.6	1
000059 Accidental Liquid RadWaste Rel. / 9					X		AA2.05 - The occurrence of automatic safety actions as a result of a high PRM system signal	3.9	1
W/E14 Loss of CTMT Integrity / 5					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.8	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**2**	**2**	**Group Point Total:**		**4**

PWR SRO Examination Outline

Facility: R. E. Ginna

ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

s/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
006 Emergency Core Cooling								X				A2.11 - Rupture of ECCS header	4.4	1
010 Pressurizer Pressure Control											X	2.2.40 - Ability to apply technical specifications for a system.	4.7	1
012 Reactor Protection											X	2.2.40 - Ability to apply technical specifications for a system.	4.7	1
026 Containment Spray								X				A2.07 - Loss of containment spray pump suction when in recirculation mode, possibly caused by clogged sump screen, pump inlet high temperature exceeded cavitation, voiding), or sump level below cutoff (interlock) limit	3.9	1
064 Emergency Diesel Generator								X				A2.16 - Loss of offsite power during full-load testing of ED/G	3.7	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2**	**Group Point Total:**		**5**

PWR SRO Examination Outline

Facility: R. E. Ginna

ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
011 Pressurizer Level Control								X				A2.10 - Failure of PZR level instrument - high	3.6	1
016 Non-nuclear Instrumentation								X				A2.03 - Interruption of transmitted signal	3.3*	1
068 Liquid Radwaste											X	2.1.32 - Ability to explain and apply system limits and precautions.	4.0	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**1**	**Group Point Total:**		**3**

Generic Knowledge and Abilities Outline (Tier 3)

PWR SRO Examination Outline

Facility: R. E. Ginna

Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.5	Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.	3.9	1
	2.1.37	Knowledge of procedures, guidelines, or limitations associated with reactivity management.	4.6	1
		Category Total:		**2**
Equipment Control	2.2.19	Knowledge of maintenance work order requirements.	3.4	1
	2.2.44	Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.	4.4	1
		Category Total:		**2**
Radiation Control	2.3.6	Ability to approve release permits.	3.8	1
		Category Total:		**1**
Emergency Procedures/Plan	2.4.40	Knowledge of SRO responsibilities in emergency plan implementation.	4.5	1
	2.4.16	Knowledge of EOP implementation hierarchy and coordination with other support procedures or guidelines such as, operating procedures, abnormal operating procedures, and severe accident management guidelines.	4.4	1
		Category Total:		**2**
		Generic Total:		**7**

Tier / Group	Randomly Selected K/A	Reason for Rejection
Outline Submittal		
1/2 RO	W/E02 EA2.1	K/A required selection of appropriate procedures for SI Termination and no credible distracters can be developed against this topic. Replaced with EA2.1 through random selection.
2/1 RO	006 K5.07	K/A is ambiguous and low operational validity (Expected temperature levels in various locations of the RCS due to various plant conditions). Replaced with K5.05 through random selection.
3 RO	2.2.18	Low operational validity for an RO. Replaced with 2.2.13 through random selection.
1/1 SRO	000017 AA2.07	Low operational validity. No procedures require the SRO to calculate natural circulation flow only verify that it exists against specific criteria. The SRO would not be performing this in the event of an RCP Malfunction. Replaced with AA2.10 through random selection.
3 SRO	2.4.41	Replaced due to over sampling. This K/A was previously sampled in Tier 1/Group 2 and is also being given as an Administrative JPM on the Operating Test. Replaced with 2.4.16 through random selection.
Draft Written Submittal		
1/1 RO RO Q3	000009 EA1.15 - Ability to operate and monitor the following as they apply to a small break LOCA: PORV and PORV block valve	Changed to: 000011 EA1.06 - Ability to operate and monitor the following as they apply to a Large Break LOCA: D/Gs Reason: Unable to write a discriminating question with out writing a double jeopardy question due to other questions already written.
1/1 RO RO Q4	000011 EK2.02 - Knowledge of the interrelations between the and the following Large Break LOCA: Pumps	Changed to: 000009 EK3.23 - Knowledge of the reasons for the following responses as they apply to the small break LOCA: RCP tripping requirements Reason: There are no required reasons to trip RCPs during a LBLOCA but there are specific, good and testable reasons to trip RCPs during a SBLOCA.
1/1 RO RO Q8	000038 2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.	Changed to: 000038 2.4.18 - Knowledge of the specific bases for EOPs. Reason: Unable to write a discriminating question at the RO level and not risk exam overlap/double jeopardy.

R. E. Ginna 2008 Written Exam for 11/7/2008

Tier / Group	Randomly Selected K/A	Reason for Rejection
2/1 RO RO Q36	012 A1.01 - Ability to predict and/or monitor Changes in parameters (to prevent exceeding design limits) associated with operating the RPS controls including: Trip setpoint adjustment	Changed to: 012 K6.06 - Knowledge of the effect of a loss or malfunction of the following will have on the RPS: Sensors and detectors Reason: Unable to write a discriminating question at the RO level.
2/1 RO RO Q49	073 A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Erratic or failed power supply	Changed to: 073 A2.02 - Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Detector failure Reason: Unable to write a discriminating question at the RO level.
2/2 RO	071 A4.13 - Ability to manually operate and/or monitor in the control room: Recovery from automatic termination of gas release due to PRM system alarm	Changed to: 071 A4.09 - Ability to manually operate and/or monitor in the control room: Waste gas release rad monitors Reason: Unable to write a discriminating question at the RO level.
1/1 SRO SRO Q77	000026 2.2.39 - Knowledge of less than or equal to one hour Technical Specification action statements for systems	Changed to: 000026 2.2.37 - Ability to determine operability and/or availability of safety related equipment. Reason: Unable to write a discriminating question at the SRO level.
1/1 SRO SRO Q80	W/E11 EA2.2 - Ability to determine and interpret the following as they apply to the (Loss of Emergency Coolant Recirculation): Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.	Changed to: W/E11 EA2.1 - Ability to determine and interpret the following as they apply to the (Loss of Emergency Coolant Recirculation): Facility conditions and selection of appropriate procedures during abnormal and emergency operations. Reason: Unable to write a discriminating question at the SRO level.

R. E. Ginna 2008 Written Exam for 11/7/2008

Tier / Group	Randomly Selected K/A	Reason for Rejection
3 SRO SRO Q94	2.1.4 - Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.	Changed to: 2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc. Reason: Unable to write a discriminating question at the SRO level
Final Written Submittal		
2/2 RO RO Q56	002 K1.05 - Knowledge of the physical connections and/or cause-effect relationships between the RCS and the following systems: PRT	Changed to: 002 K1.07 - Knowledge of the physical connections and/or cause-effect relationships between the RCS and the following systems: Reactor vessel level indication system Reason: Unable to write a discriminating question at the RO level.
2/2 RO RO Q59	034 K6.02 - Knowledge of the effect of a loss or malfunction on the following will have on the Fuel Handling System: Radiation monitoring systems	Changed to: 034 K3.01 - Ability to monitor automatic operation of the Fuel Handling System including: Travel limits Reason: Unable to write a discriminating question at the RO level.
3 RO RO Q67	2.1.38 - Knowledge of the station's requirements for verbal communications when implementing procedures.	Changed to: 2.1.20 - Ability to interpret and execute procedure steps. Reason: Unable to write a discriminating question at the RO level.
3 RO RO Q71	2.3.5 - Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personal monitoring equipment, etc.	Changed to: 2.3.11 - Ability to control radiation releases. Reason: Unable to write a discriminating question at the RO level.
2/2 SRO SRO Q93	Liquid Radwaste 068 2.2.38 - Knowledge of conditions and limitations in the facility license	Changed to: 068 2.1.32 - Ability to explain and apply system limits and precautions. Reason: Unable to write a discriminating question at the SRO level.

Facility: R. E. Ginna Date of Examination: 08/25/2008

Examination Level: RO ☒ SRO ☐ Operating Test Number: 1

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M,S or R	CRITICAL ROD POSITION CALCULATION JPM N-RA-1 K/A 2.1.25 3.9 / 4.2
Conduct of Operations	M,P,S	Manually Calculate QPTR JPM N-RA-2 K/A 2.1.7 4.4 / 4.7
Equipment Control	M,S	Tagout Boundary for "B" Heater Drain Tank Pump JPM N-RA-3 K/A 2.2.13 4.1 / 4.3
Radiation Control		
Emergency Plan	M,S or R	Monitor Critical Safety Function Status Trees JPM N-RA-4 K/A 2.4.13 4.0 / 4.6

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

* Type Codes & Criteria:
(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)

Facility: R. E. Ginna Date of Examination: 08/25/2008

Exam Level: RO ☒ SRO-I ☐ SRO-U ☐ Operating Test No.: 1

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

		Type Code*	Safety Function
a. Alternate Dilution of the RCS (R/B occurs during dilutiion) 004 A2.16 3.2/3.6	JPM A	S,N,A	1
b. Transfer ECCS to Cold Leg Recirculation (Alt. Path) EPE 011 EA1.11 4.2/4.2	JPM B	S,M,A	2
c. Placing LTOP on Service 010 A4.03 4.0/3.8	JPM C	S,N,L	3
d. Respond To a Control Room Evacuation (Alt Path) APE 068 AA1.23 4.3 /4.4	JPM D	S,N,A	4P
e. Respond to a Total Loss of SW 076 A2.01 3.5*/3.7*	JPM E	S,M,A	4S
f. Shutdown the "A" Emergency Diesel Generator 064 A4.06 3.9/3.9	JPM F	S,D	6
g. Remove a Power Range Channel From Service 015 A2.02 3.1/3.5*	JPM G	S,D	7
h. Shutdown Containment Purge APE 036 AA1.01 3.3/3.8	JPM H	S,D,L	8
In-Plant Systems@ (3 for RO); (3 for SRO-I); (3 or 2 for SRO-U)			
i. Startup and Parallel Rod Drive MG Set (Parallel Fails) 001 A4.08 3.7/3.4	JPM I	N,L,A	1
j. Align Fire Water System to Fill the CSTs Using Condensate Transfer System 061 K4.01 4.1/4.2	JPM J	D,E	4S
k. Trip of Failed AC Emergency UV Relay APE 077 AA1.05 3.9/4.0	JPM K	D,R,E	7

@ 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
(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	

Facility: R. E. Ginna Date of Examination: 08/25/2008

Examination Level: RO ☐ SRO ☒ Operating Test Number: 1

Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M,R	Verify Estimated Critical Rod Position Calculation JPM N-SA-1 K/A 2.1.37 4.6
Conduct of Operations	N,R	A-52.12, Inoperability of Equipment JPM N-SA-2 K/A 2.1.18 3.8
Equipment Control	M,S	Review the Tagout Boundary for "B" Heater Drain Tank Pump JPM N-SA-3 K/A 2.2.13 4.3
Radiation Control	N,S or R	Implement the Requirements of ODCM for RMS Operability JPM N-SA-4 K/A 2.3.15 3.1
Emergency Plan	D,S or R	Event Classification JPM N-SA-5 K/A 2.4.41 4.6

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when all 5 are required.

* Type Codes & Criteria:
(C)ontrol room, (S)imulator, or Class(R)oom
(D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes)
(N)ew or (M)odified from bank (≥ 1)
(P)revious 2 exams (≤ 1; randomly selected)

Facility: R. E. Ginna Date of Examination: 08/25/2008

Exam Level: RO ☐ SRO-I ☒ SRO-U ☐ Operating Test No.: 1

Control Room Systems[@] (8 for RO); (7 for SRO-I); (2 or 3 for SRO-U, including 1 ESF)

		Type Code*	Safety Function
a. Alternate Dilution of the RCS (R/B occurs during dilutiion) 004 A2.16 3.2/3.6	JPM A	S,N,A	1
b. Transfer ECCS to Cold Leg Recirculation (Alt. Path) EPE 011 EA1.11 4.2/4.2	JPM B	S,M,A	2
c.			
d. Respond To a Control Room Evacuation (Alt Path) APE 068 AA1.23 4.3 /4.4	JPM D	S,N,A	4P
e. Respond to a Total Loss of SW 076 A2.01 3.5*/3.7*	JPM E	S,M,A	4S
f. Shutdown the "A" Emergency Diesel Generator 064 A4.06 3.9/3.9	JPM F	S,D	6
g. Remove a Power Range Channel From Service 015 A2.02 3.1/3.5*	JPM G	S,D	7
h. Shutdown Containment Purge APE 036 AA1.01 3.3/3.8	JPM H	S,D,L	8

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

i. Startup and Parallel Rod Drive MG Set (Parallel Fails) 001 A4.08 3.7/3.4	JPM I	N,L,A	1
j. Align Fire Water System to Fill the CSTs Using Condensate Transfer System 061 K4.01 4.1/4.2	JPM J	D,E	4S
k. Trip of Failed AC Emergency UV Relay APE 077 AA1.05 3.9/4.0	JPM K	D,R,E	7

@ 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.

Facility: R. E. Ginna Scenario No.: 1 Op-Test No.: 1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: 70%, EOL

Turnover: SI Pump A OOS to refurbish failed motor, S/G A LT-461 OOS due to failed electronics, MDAFW Pump A OOS for impeller replacement

Event No.	Malf. No.	Event Type*	Event Description
1	TUR16B	I-SRO	PT-486, Turbine First Stage Pressure Fails Low.
2	RCS11F	I-All, TS-SRO	Loop B T_{hot} TE-404A fails high.
3	SGN04B	C-ATC/SRO, TS-SRO	S/G B Tube Leak of ≈ 10 gpm
4	N/A	R-ATC, N-BOP/SRO	Plant Power Reduction
5	RCS15B, RCS15D	C-ATC/SRO	RCP 1B High Vibration
6	SGN04B, STM03, STM05B, RHR01A, RPS07C, RPS07D	M-All, C-BOP	Main Steam Line Break Downstream of MSIVs which causes S/G tube leak to rise to a 400 GPM tube rupture in S/G B. MSIV B fails to close automatically or manually from the MCB, SI Pump C fails to Auto Start on SI Signal, RHR Pump A trips on auto start.

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: R. E. Ginna Scenario No.: 2 Op-Test No.: 1

Examiners: _____ Operators: _____

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_____ _____

Initial Conditions: 100%, BOL

Turnover: SI Pump A OOS to refurbish failed motor, S/G A LT-461 OOS due to failed electronics, MDAFW Pump A OOS for impeller replacement

Event No.	Malf. No.	Event Type*	Event Description
1	PZR04	I-ATC/SRO, TS-SRO	Pressurizer Pressure Master Controller PC-431K output fails high
2	RCS02C	C-SRO, TS-SRO	RCS Leak Hot Leg B
3	HTR02A	C-BOP/SRO	Heater Drain Tank Pump 1A Trips
4	N/A	R-ATC, N-BOP/SRO	Power Reduction to 70%
5	SGN01D	I-BOP/SRO, TS-SRO	S/G A Level LT-463 fails high
6	RCS03C, RPS07E, RPS07F, RPS07L, RPS07M, RPS07N, A-SIS01, IND-SIS44, MIS05D	M-ALL, C-BOP	Large Break LOCA Hot Leg B, RHR Pumps A and B fail to auto start on SI Signal, MDAFW Pump B and the TDAFW Pump fail to auto start, MOV-313 fails to close on CI, RWST Level Channel 921 Fails Low during Injection Phase

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: R. E. Ginna Scenario No.: 3 Op-Test No.: 1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: 70%, BOL

Turnover: SI Pump A OOS to refurbish failed motor, S/G A LT-461 OOS due to failed electronics

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	R-ATC, N-BOP/SRO	Power Ascension
2	RCS11C, ROD12	I-ALL, TS-SRO	Loop A T_{cold} TE-401B Fails Low, Rod Block failed
3	OVR-MIS06B, OVR-MIS06D, A-EDS16	TS-SRO	Containment Recirculation Fan Cooler A Trips
4	CVC10A	I-ATC/SRO	VCT Level Transmitter LT-112 Fails High
5	FDW07C	I-BOP/SRO	Feedwater Control Valve B, FCV-476, Auto Controller Fails High, w/Manual Control available
6	STM03, STM05A, STM05B, SIS02A, SIS02B	M-ALL, I-ATC	Main Steam line break downstream of MSIVs, both MSIVs fail to close automatically or from the MCB, SI fails to actuate when setpoint reached

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor

Facility: R. E. Ginna Scenario No.: 4 Op-Test No.: 1

Examiners: _____ Operators: _____

_____ _____

_____ _____

Initial Conditions: 70%, MOL

Turnover: SI Pump A OOS to refurbish failed motor, S/G A LT-461 OOS due to failed Electronics, MDAFW Pump A OOS for impeller replacement

Event No.	Malf. No.	Event Type*	Event Description
1	RCS16	C-ATC/SRO, TS-SRO	High RCS Activity
2	SGN03B	I-BOP/SRO, TS-SRO	Steam Generator A Pressure Transmitter PT-469 Fails Low
3	CVC05	I-ATC/SRO	Letdown Non-Regenerative Heat Exchanger Outlet Temperature TT-130 Fails Low
4	FDW04B	C-BOP/SRO	Feedwater Pump B Lube Oil System Leak
5	N/A	N-BOP/SRO, R-ATC	Down Power to 50%
6	CND08, EDS04B, RPS05A, RPS05B, RPS07M, RPS07N, FDW12	M-All, C-BOP	Condensate Line Break, Bus 16 Fault, Loss of Feedwater & Preferred AFW

* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor