Facility: R E Ginna Printed: 02/17/2004

Date Of Exam: 04/05/2004

Tier	Group	RO K/A Category Points												SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	
1. Emergency & Abnormal Plant Evolutions	1	1	2	4				4	3			4	18	0	0	0	0	0
	2	1	3	1				1	1			2	9	0	0	0	0	0
	Tier Totals	2	5	5				5	4			6	27	0	0	0	0	0
2. Plant Systems	1	2	2	3	3	1	3	3	4	3	2	2	28	0	0	0	0	0
	2	1	1	1	1	1	1	1	1	1	1	0	10	0	0	0	0	0
	Tier Totals	3	3	4	4	2	4	4	5	4	3	2	38	0	0	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 K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding the SRO sampling.

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. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system unless they relate to plant-specific priorities.

4. Systems/evolutions within each group are identified on the associated outline.

5. The shaded areas are not applicable to the category /tier.

6.* 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. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.

7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) 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 columns labeled "K" and "A". Use duplicate pages for RO and SRO-only exams.

8. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.

9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

PWR RO Examination Outline

Printed: 02/17/2004

Facility: R E Ginna

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

/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000007 Reactor Trip - Stabilization - Recovery / 1		X					EK2.02 - Breakers, relays and disconnects	2.6	1
000008 Pressurizer Vapor Space Accident / 3	X						AK1.02 - Change in leak rate with change in pressure	3.1	1
000011 Large Break LOCA / 3				X			EA1.13 - Safety injection components	4.1*	1
000015/000017 RCP Malfunctions / 4					X		AA2.10 - When to secure RCPs on loss of cooling or seal injection	3.7	1
000022 Loss of Rx Coolant Makeup / 2					X		AA2.01 - Whether charging line leak exists	3.2	1
000025 Loss of RHR System / 4				X			AA1.09 - LPI pump switches, ammeter, discharge pressure gauge, flow meter, and indicators	3.2	1
000026 Loss of Component Cooling Water / 8				X			AA1.01 - CCW temperature indications	3.1	1
000027 Pressurizer Pressure Control System Malfunction / 3			X				AK3.01 - Isolation of PZR spray following loss of PZR heaters	3.5*	1
000029 ATWS / 1						X	2.4.50 - Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.3	1
00038 Steam Gen. Tube Rupture / 3			X				EK3.05 - Normal operating precautions to preclude or minimize SGTR	4.0	1
000054 Loss of Main Feedwater / 4						X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	3.1	1
000056 Loss of Off-site Power / 6			X				AK3.01 - Order and time to initiation of power for the load sequencer	3.5	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
000058 Loss of DC Power / 6				X			AA1.01 - Cross-tie of the affected dc bus with the alternate supply	3.4*	1
000065 Loss of Instrument Air / 8						X	2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	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
W/E11 Loss of Emergency Coolant Recirc. / 4						X	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.9	1

PWR RO Examination Outline

Printed: 02/17/2004

Facility: R E Ginna

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

'/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
W/E12 - Steam Line Rupture - Excessive Heat Transfer / 4					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.4	1
K/A Category Totals:	**1**	**2**	**4**	**4**	**3**	**4**	**Group Point Total:**		**18**

PWR RO Examination Outline

Printed: 02/17/2004

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
000003 Dropped Control Rod / 1		X					AK2.05 - Control rod drive power supplies and logic circuits	2.5	1
000028 Pressurizer Level Malfunction / 2		X					AK2.02 - Sensors and detectors	2.6	1
000032 Loss of Source Range NI / 7						X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.0	1
000037 Steam Generator Tube Leak / 3			X				AK3.05 - Actions contained in procedures for radiation monitoring, RCS water inventory balance, S/G tube failure, and plant shutdown	3.7	1
000068 Control Room Evac. / 8		X					AK2.02 - Reactor trip system	3.7	1
W/E02 SI Termination / 3				X			EA1.1 - Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	4.0	1
W/E03 LOCA Cooldown - Depress. / 4						X	2.1.32 - Ability to explain and apply all system limits and precautions.	3.4	1
W/E06 Inad. Core Cooling / 4					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.5	1
W/E15 Containment Flooding / 5	X						EK1.1 - Components, capacity, and function of emergency systems	2.8	1
K/A Category Totals:	**1**	**3**	**1**	**1**	**1**	**2**	**Group Point Total:**		**9**

PWR RO Examination Outline

Printed: 02/17/2004

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	Imp.	Points
003 Reactor Coolant Pump				X								K4.07 - Minimizing RCS leakage (mechanical seals)	3.2	1
004 Chemical and Volume Control					X							K5.27 - Reason for nitrogen purge of CVCS	2.6	1
005 Residual Heat Removal						X						K6.03 - RHR heat exchanger	2.5	1
006 Emergency Core Cooling	X											K1.07 - MFW System	2.9*	1
006 Emergency Core Cooling		X										K2.01 - ECCS pumps	3.6	1
007 Pressurizer Relief/Quench Tank							X					A1.01 - Maintaining quench tank water level within limits	2.9	1
008 Component Cooling Water								X				A2.02 - High/low surge tank level	3.2	1
010 Pressurizer Pressure Control								X				A2.02 - Spray valve failures	3.9	1
012 Reactor Protection						X						K6.01 - Bistables and bistable test equipment	2.8	1
012 Reactor Protection		X										K2.01 - RPS channels, components, and interconnections	3.3	1
013 Engineered Safety Features Actuation							X					A1.05 - Main steam pressure	3.4	1
013 Engineered Safety Features Actuation										X		A4.01 - ESFAS-initiated equipment which fails to actuate	4.5	1
022 Containment Cooling											X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	3.1	1
026 Containment Spray									X			A3.01 - Pump starts and correct MOV positioning	4.3	1
039 Main and Reheat Steam	X											K1.02 - Atmospheric relief dump valves	3.3	1
056 Condensate								X				A2.04 - Loss of condensate pumps	2.6	1
059 Main Feedwater									X			A3.03 - Feedwater pump suction flow pressure	2.5	1
059 Main Feedwater										X		A4.08 - Feed regulating valve controller	3.0*	1
061 Auxiliary/Emergency Feedwater				X								K4.01 - Water sources and priority of use	4.1	1
062 AC Electrical Distribution			X									K3.03 - DC system	3.7	1
063 DC Electrical Distribution									X			A3.01 - Meters, annunciators, dials, recorders, and indicating lights	2.7	1
064 Emergency Diesel Generator						X						K6.07 - Air receivers	2.7	1
64 Emergency Diesel Generator								X				A2.06 - Operating unloaded,	2.9	1

PWR RO Examination Outline

Printed: 02/17/2004

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 lightly loaded, and highly loaded time limit	Imp.	Points
073 Process Radiation Monitoring							X					A1.01 - Radiation levels	3.2	1
076 Service Water				X								K4.01 - Conditions initiating automatic closure of closed cooling water auxiliary building header supply and return valves	2.5*	1
076 Service Water			X									K3.01 - Closed cooling water	3.4*	1
078 Instrument Air											X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.0	1
103 Containment			X									K3.01 - Loss of containment integrity under shutdown conditions	3.3*	1
K/A Category Totals:	**2**	**2**	**3**	**3**	**1**	**3**	**3**	**4**	**3**	**2**	**2**	**Group Point Total:**		**28**

PWR RO Examination Outline

Printed: 02/17/2004

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
002 Reactor Coolant			X									K3.02 - Fuel	4.2	1
011 Pressurizer Level Control						X						K6.04 - Operation of PZR level controllers	3.1	1
014 Rod Position Indication				X								K4.06 - Individual and group misalignment	3.4	1
015 Nuclear Instrumentation		X										K2.01 - NIS channels, components, and interconnections	3.3	1
017 In-core Temperature Monitor	X											K1.01 - Plant computer	3.2*	1
028 Hydrogen Recombiner and Purge Control								X				A2.03 - The hydrogen air concentration in excess of limit flame propagation or detonation with resulting equipment damage in containment	3.4	1
029 Containment Purge							X					A1.03 - Containment pressure, temperature, and humidity	3.0*	1
045 Main Turbine Generator									X			A3.04 - T/G trip	3.4	1
071 Waste Gas Disposal					X							K5.04 - Relationship of hydrogen/oxygen concentrations to flammability	2.5	1
079 Station Air										X		A4.01 - Cross-tie valves with IAS	2.7	1
K/A Category Totals:	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**Group Point Total:**		**10**

Generic Knowledge and Abilities Outline (Tier 3)

PWR RO Examination Outline

Printed: 02/17/2004

Facility: R E Ginna

Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.	3.0	1
	2.1.31	Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup.	4.2	1
	2.1.33	Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.	3.4	1
		Category Total:		**3**
Equipment Control	2.2.2	Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels.	4.0	1
	2.2.33	Knowledge of control rod programming.	2.5	1
		Category Total:		**2**
Radiation Control	2.3.2	Knowledge of facility ALARA program.	2.5	1
	2.3.11	Ability to control radiation releases.	2.7	1
		Category Total:		**2**
Emergency Procedures/Plan	2.4.16	Knowledge of EOP implementation hierarchy and coordination with other support procedures.	3.0	1
	2.4.31	Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
	2.4.39	Knowledge of the RO's responsibilities in emergency plan implementation.	3.3	1
		Category Total:		**3**
		Generic Total:		**10**

Facility: R E Ginna Printed: 02/17/2004

Date Of Exam: 04/05/2004

Tier	Group	RO K/A Category Point:												SRO-Only Points				
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	K	A	A2	G*	
1. Emergency & Abnormal Plant Evolutions	1	0	0	0				0	0			0	0	0	0	3	4	7
	2	0	0	0				0	0			0	0	0	0	3	2	5
	Tier Totals	0	0	0				0	0			0	0	0	0	6	6	12
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	6
3. Generic Knowledge And Abilities Categories					1		2		3		4		0	1	2	3	4	7
					0		0		0		0			2	1	2	2	

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding the SRO sampling.

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. Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system unless they relate to plant-specific priorities.

4. Systems/evolutions within each group are identified on the associated outline.

5. The shaded areas are not applicable to the category /tier.

6.* 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. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.

7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) 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 columns labeled "K" and "A". Use duplicate pages for RO and SRO-only exams.

8. For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.

9. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

PWR SRO Examination Outline

Printed: 02/17/2004

Facility: R E Ginna

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

/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000008 Pressurizer Vapor Space Accident / 3					X		AA2.16 - RCS in-core thermocouple indicators; use of plant computer for interpretation	4.1	1
000011 Large Break LOCA / 3						X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1
000015/000017 RCP Malfunctions / 4						X	2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
000025 Loss of RHR System / 4					X		AA2.07 - Pump cavitation	3.7	1
000038 Steam Gen. Tube Rupture / 3						X	2.4.6 - Knowledge symptom based EOP mitigation strategies.	4.0	1
000058 Loss of DC Power / 6						X	2.4.4 - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1
W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4					X		EA2.1 - Facility conditions and selection of appropriate procedures during abnormal and emergency operations	4.4	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**3**	**4**	**Group Point Total:**		**7**

PWR SRO Examination Outline

Printed: 02/17/2004

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
000032 Loss of Source Range NI / 7						X	2.1.32 - Ability to explain and apply all system limits and precautions.	3.8	1
000067 Plant Fire On-site / 9					X		AA2.15 - Requirements for establishing a fire watch	3.9	1
000069 Loss of CTMT Integrity / 5					X		AA2.01 - Loss of containment integrity	4.3	1
W/E07 Inad. Core Cooling / 4						X	2.4.30 - Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
W/E15 Containment Flooding / 5					X		EA2.1 - Facility conditions and selection of appropriate procedures during abnormal and emergency operations	3.2	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**3**	**2**	**Group Point Total:**		**5**

PWR SRO Examination Outline

Printed: 02/17/2004

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	Imp.	Points
022 Containment Cooling											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
026 Containment Spray								X				A2.03 - Failure of ESF	4.4	1
039 Main and Reheat Steam											X	2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	1
063 DC Electrical Distribution								X				A2.01 - Grounds	3.2*	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**Group Point Total:**		**4**

PWR SRO Examination Outline

Printed: 02/17/2004

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
033 Spent Fuel Pool Cooling								X				A2.03 - Abnormal spent fuel pool water level or loss of water level	3.5	1
055 Condenser Air Removal											X	2.1.14 - Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
K/A Category Totals:	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**Group Point Total:**		**2**

Generic Knowledge and Abilities Outline (Tier 3)

PWR SRO Examination Outline

Printed: 02/17/2004

Facility: R E Ginna

Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points
Conduct of Operations	2.1.13	Knowledge of facility requirements for controlling vital / controlled access.	2.9	1
	2.1.32	Ability to explain and apply all system limits and precautions.	3.8	1
		Category Total:		**2**
Equipment Control	2.2.17	Knowledge of the process for managing maintenance activities during power operations.	3.5	1
		Category Total:		**1**
Radiation Control	2.3.6	Knowledge of the requirements for reviewing and approving release permits.	3.1	1
	2.3.8	Knowledge of the process for performing a planned gaseous radioactive release.	3.2	1
		Category Total:		**2**
Emergency Procedures/Plan	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations.	4.0	1
	2.4.46	Ability to verify that the alarms are consistent with the plant conditions.	3.6	1
		Category Total:		**2**
		Generic Total:		**7**

Facility: R. E. Ginna Station Date of Examination: 4/5/04
Examination Level (circle one): RO Operating Test Number: 04-1

Administrative Topic (see Note)	Describe activity to be performed
Conduct of Operations	Calculate Shutdown Margin for an Operation Reactor with an Untrippable Rod JR001.008 KA 2.1.7 Importance 3.7 CFR 41.10
Conduct of Operations	Calculate QPTR JR015.001 KA 2.1.32 Importance 3.4 CFR 41.10
Equipment Control	PPCS Computer Checks JR083.001 KA 2.2.12 Importance 3.0 CFR 41.10
Radiation Control	
Emergency Plan	Monitor Critical Safety Function Status Trees JR352.001 KA 2.4.21 Importance 3.7 CFR 41.10

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

Facility: R. E. Ginna Station Date of Examination: 4/5/04
Examination Level (circle one): SRO Operating Test Number: 04-1

Administrative Topic (see Note)	Describe activity to be performed
Conduct of Operations	Fitness for Duty/Shift Staffing Requirements JS343.003 KA 2.1.5 Importance 3.4 CFR 43.2
Conduct of Operations	Loss of Safety Function Determination JS341.001 KA 2.1.12 Importance 4.0 CFR 43.2/43.5
Equipment Control	Review and Approve a Fuel Handling Deviation Report JS034.001 KA 2.2.26 Importance 3.7 CFR 43.7
Radiation Control	Review and Approve a Waste Gas Holdup Tank Release JS071.001 KA 2.3.8 Importance 3.2 CFR 43.4
Emergency Plan	Event Classification JS340.016 KA 2.4.41 Importance 4.0 CFR 43.5

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

Facility: R. E. Ginna Station Date of Examination: 4/5/04
Exam Level (circle one): RO Operating Test No.: 04-1

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a. 004 Chemical and Volume Control System Borate RCS for SDM JR012.009	NSL	1
b. 035 Steam Generator System Establish RCS Cooling per AP-RHR.1 JR005.008	NASL	4
c. 103 Containment System Initiate CNMT Closure JR005.007	NSL	5
d. 010 Pressurizer Pressure Control System Depressurize the RCS Using Nitrogen JR010.003	DASL	3
e. 062 AC Electrical Distribution System Transfer 4160V Auxiliary Loads JR062.005	DS	6
f. 015 Nuclear Instrumentation System Remove N-41 from Service JR015.002	DS	7
g. 006 Emergency Core Cooling System Makeup to the "B" Accumulator from RWST JR006.001	MAS	2
h. 029 Containment Purge System Start Containment Mini-Purge JR029.001	DAS	8
In-Plant Systems (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i. 061 Auxiliary Feedwater System Reset TDAFW Trip/Throttle Valve JC061.005	DA	4
j. 103 Containment System Isolate CNMT Closure Valves JC103.007	MLR**	5
k. 063 DC Electrical Distribution System Align TSC Battery to 1B Main Fuse Cabinet JC063.001	DL**	6

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA **Actions During Emergency Conditions

Facility: R. E. Ginna Station Date of Examination: 4/5/04
Exam Level (circle one): SRO(U) Operating Test No.: 04-1

Control Room Systems (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a. 004 Chemical and Volume Control System Borate RCS for SDM JR012.008	NSL	1
b. 010 Pressurizer Pressure Control System Depressurize the RCS using N_2 JR010.003	DASL	3
c. 006 Emergency Core Cooling System Makeup to the "B" Accumulator from the RWST JR006.001	MAS**	2
d.		
e.		
f.		
g.		
h.		

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

i. 103 Containment System Isolate CNMT Closure Valves JC103.007	MLR	5
j. 063 DC Electrical Distribution System Align TSC Battery to "1B" Main Fuse Cabinet JC063.001	DL	6
k.		

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA **ESF System

Facility: R. E. Ginna Station Scenario No.: #1 Op-Test No.: 04-1

Examiners: _____ Operators: _____

Initial Conditions: MOL, O-1.2 complete up to starting the first MFW pump. TDAFW pump has failed.

Turnover: Plant Startup is in progress. O-1.2 complete up to step 5.4.3.18. Continue startup and place MFW in service.

Event No.	Malf. No.	Event Type*	Event Description
1	NA	BOP (N) SRO (N)	Start MFW Pump
2	PZR03B	RO (I) SRO (I)	Przr Level Fails Low (Tech Spec)
3	STM04A	BOP (I) SRO (I)	S/G ARV fails open. Manual control available.
4	RCS02A	RO (C) SRO (C)	Small Leak (Ramps to 25 gpm) develops on CRDM housing (Tech Spec)
5	ROD13C G11		MRPI Coil Stack fails from Leakage (Tech Spec)
6	ROD05 G11	All (M)	Rod Housing Fails Ejecting an RCCA
7	SIS02A RPS07B	RO (C) SRO(C)	SI Sequencer Failure (A train) B SI Pump Fails to Auto Start
8	RPS07K	BOP (C) SRO(C)	No AFW Pumps Auto Start

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

Facility: R. E. Ginna Station Scenario No.: #2 Op-Test No.: 04-1

Examiners: _____ Operators: _____

Initial Conditions: 100% MOL Xenon Eq. (IC-19) Pull Stop and Hold "D" CNMT Recirc Fan.

Turnover: 100% MOL Xenon Eq., C_B - 778 ppm. "D" CNMT Recirc Fan OOS for Breaker Work (see A-52.4), expected back in 2-3 hours.

Event No.	Malf. No.	Event Type*	Event Description
1	TUR16A	RO (I) SRO (I)	Turbine First Stage Pressure Transmitter Fails Low
2	CND03B	BOP (I) SRO (I)	Hotwell Level Channel LT-2001 Fails High causing full Hotwell rejection. (Will result in loss of MFW if no action taken)
3	EDS01A	All (C)	Loss of Offsite Power Circuit 751 (Tech Specs)
4	SGN04B	BOP (N) RO (R) SRO (N)	SG Tube Leak "B" SG 10 gpm (requires taking plant off line) (Tech Specs)
5	PZR05B	RO (C) SRO (C)	Przr Relief Valve PCV-431C Fails Open 50% (Tech Specs)
6	SGN04B	All (M)	SGTR (500 gpm) "B" S/G
7	STM05B	BOP (C) SRO (C)	"B" MSIV fails to close

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

Facility: R. E. Ginna Station Scenario No.: #3 Op-Test No.: 04-1

Examiners: _____ Operators: _____

Initial Conditions: 100% Power Xe Eq. Auto Rod Control is OOS due to problems in the Tavg input. I&C is investigating. "C" Condensate Booster Pump is OOS.

Turnover: 100% Power EOL Conditions. C_B - 7 ppm. Auto Rod Control is OOS due to an internal Tavg problem. I&C is investigating.

Event No.	Malf. No.	Event Type*	Event Description
1	CLG10 CLG02B	RO (C)	Running CCW Pump Trips. Standby pump fails to Autostart. (Tech Specs)
2	FDW07A	BOP (C)	SG "A" FRV fails in Auto. Manual control is required.
3	CVC18A	RO (I)	"A" Charging Pump Speed Controller failure.
4	CND01B	BOP (N) SRO(N) RO (R)	"B" Condensate Booster Pump Trips requiring a down power.
5	PZR02A	NA	PT-429 Fails Low (sets up for inadvertent SI on station blackout) (Tech Specs)
6	EDS06	All (C)	Station Blackout
7	GEN08	BOP (C)	Diesel Generators fail to Auto Start.
8	RCS19D	All (M)	Inadvertent SI. LOCA Outside CNMT (into RHR from CV-853B)

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

Facility: R. E. Ginna Station Scenario No.: #4 Op-Test No.: 04-1

Examiners: _____ Operators: _____

Initial Conditions: 72% Power BOL C_B 1535 ppm. Xenon Increasing. "D" CNMT Recirc Fan OOS.

Turnover: The plant is at ~72% Power following a load decrease to 50% for condenser tube cleaning. Increase power to 100% at 10%/hour per O-5.2 step 5.2.12 CNMT Recirc Fan "D" is out of service for breaker maintenance (see A-52.4).

Event No.	Malf. No.	Event Type*	Event Description
1	SGN01D	NA	SG Level Channel LT-463 Fails High. (Tech Spec)
2	ROD1A	RO (C) SRO (C)	When rod motion is called for rods begin stepping and will not stop until placed in manual.
3	RCS10B	NA	RCS Flow Channel FT-412 Fails Low. (Tech Spec)
4	GEN03	BOP (C) SRO (C)	Main Generator Voltage Regulator Fails requiring manual control.
5	CLG03	RO (C) SRO (C)	Tube Leak in the Letdown Non-Regen Hx cause Letdown Leakage into the CCW System.
6	EDS02C	All (C)	Fault on Station Service Transformer 15 causes loss of non-vital bus 15 and Instrument Bus "D"
7	FDW02B	RO (R) BOP (N) SRO (N)	"B" MFW Pump Trips requiring power to be reduced until Steam Flow< Feedwater Flow
8	STM05A/ B STM03	All (M)	Steam Line break downstream of MSIV, MSIVs will not close.
9	RPS07U FDW17A	BOP (C)	Main Feedwater Isolation to "A" S/G fails.

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