

Facility: R.E. Ginna		Date of Exam: 06/21/10																
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 & Plant Evaluations	1	3	3	3				3	3			3	18	3	3	6		
	2	1	1	2				2	1			2	9	2	2	4		
	Tier Totals	4	4	5				5	4			5	27	5	5	10		
2. Plant Systems	1	2	2	3	2	3	2	2	3	3	3	3	28	3	2	5		
	2	1	1	1	1	1	1	1	1	1	1	0	10	0	2	3		
	Tier Totals	3	3	4	3	4	3	3	4	4	4	3	38	5	3	8		
3. Generic Knowledge & Abilities					1		2		3		4		10	1	2	3	4	7
					3		3		2		2			2	1	2	2	
Note	<p>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).</p> <p>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.</p> <p>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 section D.1.b of ES-401, for guidance regarding elimination of inappropriate K/A statements.</p> <p>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.</p> <p>5. Absent a plant specific priority, only those KAs 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.</p> <p>6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.</p> <p>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/A's</p> <p>8. 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 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.</p> <p>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 10CFR55.43</p>																	

R.E. Ginna
2010 NRC Written Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1 Group 1

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
056 / Loss of Off-site Power / 6					X		AA2.23 - Ability to determine and interpret the following as they apply to the Loss of Offsite Power: Turbine trip-reactor button and indicator	3.9	76
055 / Station Blackout / 6					X		EA2.04 - Ability to determine or interpret the following as they apply to a Station Blackout: Instruments and controls operable with only dc battery power available	4.1	77
026 / Loss of Component Cooling Water / 8					X		AA2.06 - Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: The length of time after the loss of CCW flow to a component before that component may be damaged	3.1	78
062 / Loss of Nuclear Service Water / 4						X	2.4.34 - Emergency Procedures / Plan: Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	4.1	79
E12 / Steam Line Rupture - Excessive Heat Transfer / 4						X	2.2.22 - Equipment Control: Knowledge of limiting conditions for operations and safety limits.	4.7	80
025 / Loss of Residual Heat Removal System / 4						X	2.4.3 - Emergency Procedures / Plan: Ability to identify post-accident instrumentation.	3.9	81
009 / Small Break LOCA / 3	X						EK1.02 - Knowledge of the operational implications of the following concepts as they apply to the small break LOCA: Use of steam tables	3.5	39

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Emergency and Abnormal Plant Evolutions - Tier 1 Group 1

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
007 / Reactor Trip - Stabilization - Recovery / 1	X						EK1.04 - Knowledge of the operational implications of the following concepts as they apply to the reactor trip: Decrease in reactor power following reactor trip (prompt drop and subsequent decay)	3.6	40
E05 / Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	X						EK1.1 - Knowledge of the operational implications of the following concepts as they apply to the (Loss of Secondary Heat Sink) Components, capacity, and function of emergency systems.	3.8	41
E11 / Loss of Emergency Coolant Recirculation / 4		X					EK2.2 - Knowledge of the interrelations between the (Loss of Emergency Coolant Recirculation) and the following: 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	42
E04 / LOCA Outside Containment / 3		X					EK2.1 - Knowledge of the interrelations between the (LOCA Outside Containment) and the following: Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.	3.5	43
077 / Generator Voltage and Electric Grid Disturbances		X					AK2.07 - Knowledge of the interrelations between Generator Voltage and Electric Grid Disturbances and the following: Turbine / generator control	3.6	44

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EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
022 / Loss of Reactor Coolant Makeup / 2			X				AK3.03 - Knowledge of the reasons for the following responses as they apply to the Loss of Reactor Coolant Makeup: Performance of lineup to establish excess letdown after determining need	3.1	45
026 / Loss of Component Cooling Water / 8			X				AK3.03 - Knowledge of the reasons for the following responses as they apply to the Loss of Component Cooling Water: Guidance actions contained in EOP for Loss of CCW/nuclear service water	4.0	46
040 / Steam Line Rupture / 4			X				AK3.02 - Knowledge of the reasons for the following responses as they apply to the Steam Line Rupture: ESFAS initiation	4.4	47
056 / Loss of Off-site Power / 6				X			AA1.24 - Ability to operate and / or monitor the following as they apply to the Loss of Offsite Power: Plant computer, to call up in-core temperature monitoring group	2.9	48
015 / 17 / Reactor Coolant Pump Malfunctions / 4				X			AA1.21 - Ability to operate and / or monitor the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Development of natural circulation flow	4.4	49
055 / Station Blackout / 6				X			EA1.01 - Ability to operate and monitor the following as they apply to a Station Blackout: In-core thermocouple temperatures	3.7	50

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 Emergency and Abnormal Plant Evolutions - Tier 1 Group 1

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
057 / Loss of Vital AC Electrical Instrument Bus / 6					X		AA2.17 - Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: System and component status, using local or remote controls	3.1	51
027 / Pressurizer Pressure Control System Malfunction / 3					X		AA2.12 - Ability to determine and interpret the following as they apply to the Pressurizer Pressure Control Malfunctions: PZR level	3.7	52
038 / Steam Generator Tube Rupture / 3					X		EA2.01 - Ability to determine or interpret the following as they apply to a SGTR: When to isolate one or more S/Gs	4.1	53
011 / Large Break LOCA / 3						X	2.1.23 - Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.3	54
054 / Loss of Main Feedwater / 4						X	2.4.34 - Emergency Procedures / Plan: Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	4.2	55
008 / Pressurizer Vapor Space Accident / 3						X	2.1.32 - Conduct of Operations: Ability to explain and apply all system limits and precautions.	3.8	56
K/A Category Totals	3	3	3	3	3/3	3/3	Group Point Total:	18/6	

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2010 NRC Written Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1 Group 2

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
036 / Fuel Handling Incidents / 8					X		AA2.03 - Ability to determine and interpret the following as they apply to the Fuel Handling Incidents: Magnitude of potential radioactive release	4.2	82
033 / Loss of Intermediate Range Nuclear Instrumentation / 7					X		AA2.12 - Ability to determine and interpret the following as they apply to the Loss of Intermediate Range Nuclear Instrumentation: Maximum allowable channel disagreement	3.1	83
E03 / LOCA Cooldown and Depressurization / 4						X	2.4.30 - Emergency Procedures / Plan; Knowledge of events related to system operation / status that must be reported to internal organizations or external agencies, such as the state, the NRC, or the transmission system operator.	4.1	84
E14 / High Containment Pressure / 5						X	2.4.6 - Emergency Procedures / Plan: Knowledge of EOP mitigation strategies.	4.7	85
024 / Emergency Boration / 1	X						AK1.01 - Knowledge of the operational implications of the following concepts as they apply to Emergency Boration: Relationship between boron addition and change in T-ave	3.4	57
074 / Inadequate Core Cooling / 4		X					EK2.08 - Knowledge of the interrelations between the following Inadequate Core Cooling: Sensors and detectors	2.5	58

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 2010 NRC Written Examination Outline
 Emergency and Abnormal Plant Evolutions - Tier 1 Group 2

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
061 / Area Radiation Monitoring (ARM) System Alarms / 7			X				AK3.02 - Knowledge of the reasons for the following responses as they apply to the Area Radiation Monitoring (ARM) System Alarms: Guidance contained in alarm response for ARM system	3.4	59
E02 / SI Termination / 3				X			EA1.3 - Ability to operate and / or monitor the following as they apply to the (SI Termination) Desired operating results during abnormal and emergency situations.	3.8	60
E13 / Steam Generator Overpressure / 4					X		EA2.2 - Ability to determine and interpret the following as they apply to the (Steam Generator Overpressure) Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.	3.0	61
069 / Loss of Containment Integrity / 5						X	2.2.39 - Equipment Control: Knowledge of less than or equal to one hour technical specification action statements for systems.	3.9	62
076 / High Reactor Coolant Activity / 9			X				AK3.05 - Knowledge of the reasons for the following responses as they apply to the High Reactor Coolant Activity : Corrective actions as a result of high fission-product radioactivity level in the RCS	2.9	63
E10 / Natural Circulation with Steam Void in Vessel with/without RVLIS / 4						X	2.2.37 - Equipment Control: Ability to determine operability and / or availability of safety related equipment.	3.6	64

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 Emergency and Abnormal Plant Evolutions - Tier 1 Group 2

EAPE#/Name Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Q#
003 / Dropped Control Rod / 1				X			AA1.01 - Ability to operate and / or monitor the following as they apply to the Dropped Control Rod: Demand position counter and pulse/analog converter	2.9	65
K/A Category Totals	1	1	2	2	1/2	2/2	Group Point Total:	9/4	

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 2010 NRC Written Examination Outline
 Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
026 Containment Spray								X				A2.04 - Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure of spray pump	4.2	86
059 Main Feedwater								X				A2.04 - Ability to (a) predict the impacts of the following malfunctions or operations on the Main Feedwater System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Feeding a dry SG	3.4	87
010 Pressurizer Pressure Control											X	2.2.38 - Equipment Control: Knowledge of conditions and limitations in the facility license.	4.5	88
004 Chemical and Volume Control											X	2.4.9 - Emergency Procedures / Plan: Knowledge of low power / shutdown implications in accident (e.g., loss of coolant accident or loss of residual heat removal) mitigation strategies.	4.2	89

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 2010 NRC Written Examination Outline
 Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
006 Emergency Core Cooling								X				A2.11 - Ability to (a) predict the impacts of the following malfunctions or operations on the ECCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Rupture of ECCS header	4.4	90
022 Containment Cooling	X											K1.01 - Knowledge of the physical connections and/or cause-effect relationships between the CCS and the following systems: SWS/cooling system	3.5	1
008 Component Cooling Water	X											K1.02 - Knowledge of the physical connections and/or cause-effect relationships between the CCWS and the following systems: Loads cooled by CCWS	3.3	2
064 Emergency Diesel Generator		X										K2.02 - Knowledge of bus power supplies to the following: Fuel oil pumps	2.8	3
078 Instrument Air		X										K2.02 - Knowledge of bus power supplies to the following Emergency air compressor	3.3	4
026 Containment Spray			X									K3.01 - Knowledge of the effect that a loss or malfunction of the CSS will have on the following: CCS	3.9	5
076 Service Water			X									K3.07 - Knowledge of the effect that a loss or malfunction of the SWS will have on the following: ESF loads	3.7	6

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 Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
039 Main and Reheat Steam				X								K4.06 - Knowledge of MRSS design feature(s) and/or interlock(s) which provide for the following: Prevent reverse steam flow on steam line break	3.3	7
013 Engineered Safety Features Actuation				X								K4.08 - Knowledge of ESFAS design feature(s) and/or interlock(s) which provide for the following Redundancy	3.1	8
004 Chemical and Volume Control					X							K5.44 - Knowledge of the operational implications of the following concepts as they apply to the CVCS: Pressure response in PZR during in-and-out surge	3.2	9
006 Emergency Core Cooling					X							K5.01 - Knowledge of the operational implications of the following concepts as they apply to ECCS: Effects of temperatures on water level indications	2.8	10
012 Reactor Protection						X						K6.03 - Knowledge of the effect of a loss or malfunction of the following will have on the RPS: Trip logic circuits	3.1	11
003 Reactor Coolant Pump						X						K6.14 - Knowledge of the effect of a loss or malfunction on the following will have on the RCPS: Starting requirements	2.6	12
007 Pressurizer Relief/Quench Tank							X					A1.02 - Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Maintaining quench tank pressure	2.7	13

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 2010 NRC Written Examination Outline
 Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
063 DC Electrical Distribution							X					A1.01 - Ability to predict and/or monitor changes in parameters associated with operating the dc electrical system controls including: Battery capacity as it is affected by discharge rate	2.5	14
005 Residual Heat Removal								X				A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the RHRS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure modes for pressure, flow, pump motor amps, motor temperature, and tank level instrumentation	2.7	15
010 Pressurizer Pressure Control								X				A2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the PZR PCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Heater failures	3.3	16
059 Main Feedwater									X			A3.06 - Ability to monitor automatic operation of the MFW, including: Feedwater isolation	3.2	17
103 Containment										X		A3.01 - Ability to monitor automatic operation of the containment system, including: Containment isolation	3.9	18

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 2010 NRC Written Examination Outline
 Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
062 AC Electrical Distribution										X		A4.04 - Ability to manually operate and/or monitor in the control room: Local operation of breakers	2.6	19
073 Process Radiation Monitoring										X		A4.02 - Ability to manually operate and/or monitor in the control room Radiation monitoring system control panel	3.7	20
061 Auxiliary/Emergency Feedwater											X	2.4.34 - Emergency Procedures / Plan: Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	4.2	21
076 Service Water											X	2.1.27 - Conduct of Operations: Knowledge of system purpose and / or function.	3.9	22
013 Engineered Safety Features Actuation			X									K3.01 - Knowledge of the effect that a loss or malfunction of the ESFAS will have on the following: Fuel	4.4	23
010 Pressurizer Pressure Control											X	2.4.20 - Emergency Procedures / Plan; Knowledge of operational implications of EOP warnings, cautions, and notes.	3.8	24
007 Pressurizer Relief/Quench Tank									X			A3.01 - Ability to monitor automatic operation of the PRTS, including: Components which discharge to the PRT	2.7	25

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 2010 NRC Written Examination Outline
 Plant Systems - Tier 2 Group 1

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
039 Main and Reheat Steam								X				A2.05 - Ability to (a) predict the impacts of the following mal-functions or operations on the MRSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Increasing steam demand, its relationship to increases in reactor power	3.3	26
063 DC Electrical Distribution										X		A4.01 - Ability to manually operate and/or monitor in the control room: Major breakers and control power fuses	2.8	27
003 Reactor Coolant Pump					X							K5.02 - Knowledge of the operational implications of the following concepts as they apply to the RCPS: Effects of RCP coastdown on RCS parameters	2.8	28
K/A Category Totals	2	2	3	2	3	2	2	3/3	3	3	3/2	Group Point Total:	28/5	

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 2010 Written Examination Outline
 Plant Systems - Tier 2 Group 2

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
068 Liquid Radwaste								X				A2.02 - Ability to (a) predict the impacts of the following malfunctions or operations on the Liquid Radwaste System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Lack of tank recirculation prior to release	2.8	91
011 Pressurizer Level Control											X	2.4.21 - Emergency Procedures / Plan: Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.6	92
001 Control Rod Drive								X				A2.19 - Ability to (a) predict the impacts of the following malfunction or operations on the CRDS- and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Axial flux distribution	4.0	93

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 2010 Written Examination Outline
 Plant Systems - Tier 2 Group 2

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
011 Pressurizer Level Control					X							K5.12 - Knowledge of the operational implications of the following concepts as they apply to the PZR LCS Criteria and purpose of PZR level program	2.7	29
015 Nuclear Instrumentation										X		A4.02 - Ability to manually operate and/or monitor in the control room: NIS indicators	3.9	30
016 Non-nuclear Instrumentation									X			A3.01 - Ability to monitor automatic operation of the NNIS, including: Automatic selection of NNIS inputs to control systems	2.9	31
001 Control Rod Drive		X										K2.05 - Knowledge of bus power supplies to the following: M/G sets.....	3.1	32
002 Reactor Coolant						X						K6.04 - Knowledge of the effect or a loss or malfunction on the following RCS components: RCS vent valves	2.5	33
071 Waste Gas Disposal				X								K4.01 - Knowledge of design feature(s) and/or interlock(s) which provide for the following: Pressure capability of the waste gas decay tank	2.6	34
072 Area Radiation Monitoring			X									K3.02 - Knowledge of the effect that a loss or malfunction of the ARM system will have on the following: Fuel handling operations	3.1	35

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 2010 Written Examination Outline
 Plant Systems - Tier 2 Group 2

System #/Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Q#
041 Steam Dump/Turbine Bypass Control								X				A2.02 - Ability to (a) predict the impacts of the following malfunctions or operations on the SDS; and (b) based on those predictions or mitigate the consequences of those malfunctions or operations: Steam valve stuck open	3.6	36
055 Condenser Air Removal	X											K1.06 - Knowledge of the physical connections and/or cause effect relationships between the CARS and the following systems: PRM system	2.6	37
086 Fire Protection							X					A1.04 - Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Fire Protection System controls including: Fire dampers	2.7	38
K/A Category Totals	1	1	1	1	1	1	1	1/2	1	1	0/1	Group Point Total:	10/3	

Facility: R.E. Ginna		Date: 6/21/2010				
Category	KA #	Topic	RO		SRO-Only	
			IR	Q#	IR	Q#
1. Conduct of Operations	2.1.5	Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.	2.9	66		
	2.1.8	Ability to coordinate personnel activities outside the control room.	3.4	67		
	2.1.3	Knowledge of shift or short-term relief turnover practices.	3.7	75		
	2.1.25	Ability to interpret reference materials, such as graphs, curves, tables, etc.			4.2	94
	2.1.42	Knowledge of new and spent fuel movement procedures.			3.4	100
Subtotal				3		2
2. Equipment Control	2.2.37	Ability to determine operability and / or availability of safety related equipment.	3.6	68		
	2.2.35	Ability to determine Technical Specification Mode of Operation.	3.6	69		
	2.2.7	Knowledge of the process for conduction special or infrequent tests	2.9	74		
	2.2.44	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions.			4.4	95
Subtotal				3		1

3. Radiation Control	2.3.14	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.	3.4	70		
	2.3.13	Knowledge of Radiological Safety Procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high radiation areas, aligning filters, etc.	3.4	71		
	2.3.5	Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.			2.9	96
	2.3.4	Knowledge of radiation exposure limits under normal or emergency conditions.			3.7	98
Subtotal				2		2
4. Emergency Procedures / Plan	2.4.30	Knowledge of events related to system operation / status that must be reported to internal organizations or external agencies, such as the state, the NRC, or the transmission system operator.	2.7	72		
	2.4.39	Knowledge of the RO's responsibilities in emergency plan implementation.	3.9	73		
	2.4.41	Knowledge of the emergency action level thresholds and classifications.			4.6	97
	2.4.38	Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator if required.			4.4	99
Subtotal				2		2
Tier 3 Point Total:				10		7

Facility: Ginna Examination Level: RO	Date of Examination: 6/21/10 Operating Test Number: NRC	
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	M, R	2.1.25 (3.9) Ability to interpret reference material, such as graphs, curves, tables, etc.
		JPM: Given a Set of Conditions, Perform a Critical Rod Position Calculation In Accordance With O-1.2.2, Critical Rod Position Calculation.
Conduct of Operations	N, R	2.1.29 (4.1) Knowledge of how to conduct system lineups, such as valves, breakers, switches, etc.
		JPM: Perform an RHR System Valve and Breaker Position Verification on the Control Board Prior to Mode 3 Entry
Equipment Control	M, R	2.2.13 (4.1) Knowledge of tagging and clearance procedures.
		JPM: Perform the RO Review of a Tagout For V-3968, 4B Condensate Heater Discharge Check Valve.
Radiation Control	N, R	2.3.15 (2.9) Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.
		JPM: Determine Steam Generator Tube Leakage Using Radiation Monitor R-47, Air Ejector Radiation Monitor Low Range
Emergency Procedure/Plan	N/A	CATEGORY NOT SELECTED
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.		
*Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (0) (N)ew or (M)odified from bank (> 1) (4) (P)revious 2 exams (≤ 1; randomly selected) (0)		

Facility: Ginna		Date of Examination:	6/21/10
Examination Level: SRO		Operating Test Number:	NRC
Administrative Topic (see Note)	Type Code*	Describe activity to be performed	
Conduct of Operations	M, R	2.1.25 (4.2)	Ability to interpret reference material, such as graphs, curves, tables, etc.
		JPM:	Review a Critical Rod Position Calculation
Conduct of Operations	M, R	2.1.18 (3.8)	Ability to make accurate, clear, and concise logs, records, status board, and reports.
		JPM:	Perform the Shift Manager review of the O-6.13, DAILY SURVEILLANCE LOG
Equipment Control	D, R	2.2.37 (4.6)	Ability to determine operability and/or availability of safety related equipment.
		JPM:	Perform a Safety Function Determination
Radiation Control	P, S	2.3.14 (3.8)	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.
		JPM:	Respond to a Contaminated Injured Person
Emergency Plan	M, R	2.4.41 (4.6)	Knowledge of the emergency action level thresholds and classifications.
		JPM:	Determine the EAL For an Event
<p>NOTE: All items (5 total are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.</p>			
<p>*Type Codes & Criteria: (C)ontrol room, (S)imulator, or Class(R)oom (D)irect from bank (≤ 3 for ROs; ≤ 4 for SROs & RO retakes) (1) (N)ew or (M)odified from bank (> 1) (3) (P)revious 2 exams (≤ 1; randomly selected) (1)</p>			

Facility:	Ginna	Date of Examination:	6/21/10
Exam Level (circle one):	RO	Operating Test No.:	NRC
Control Room Systems® (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)			
	System / JPM Title	Type Code*	Safety Function
a.	064 Emergency Diesel Generator Start the Emergency Diesel Generator during a Station Blackout	S, A, D, E, EN	6
b.	006 Emergency Core Cooling System Isolate the Safety Injection Accumulators during inadequate core cooling	S, A, E, EN, N	2
c.	003 Reactor Coolant Pump Start a RCP during a plant startup	S, L, M	4P
d.	APE 068 Control Room Evacuation Perform the immediate actions for a Control Room Evacuation	S, A, E, P	8
e.	010 Pressurizer Pressure Control System Place LTOP in service	S, P, L	3
f.	004 Chemical and Volume Control System Perform a Rapid Boration during a plant shutdown	S, L, N	1
g.	026 Containment Spray Secure Containment Spray following an automatic actuation.	S, A, E, EN, N	5
h.	061 Auxiliary / Emergency Feedwater System Place the Standby Auxiliary Feedwater System in service during a loss of heat sink	S, D, E	4S
In-Plant Systems® (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	071 Waste Gas Disposal System Release the A Gas Decay Tank	D, R	9
j.	APE 067 Plant Fire On Site Secure Ventilation System During a Fire	D, E, R	8
k.	039 Main and Reheat Steam System Locally Operate the ARVs	P, E	4S

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

Facility:	Ginna	Date of Examination:	6/21/10
Exam Level:	SRO(I) / SRO (U)	Operating Test No.:	NRC
Control Room Systems [®] (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)			
	System / JPM Title	Type Code*	Safety Function
a.	064 Emergency Diesel Generator Start the Emergency Diesel Generator during a Station Blackout	S, A, D, E, EN	6
b.	006 Emergency Core Cooling System Isolate the Safety Injection Accumulators during inadequate core cooling	S, A, E, EN, N	2
c.	003 Reactor Coolant Pump Start a RCP during a plant startup	S, L, M	4P
d.	APE 068 Control Room Evacuation Perform the immediate actions for a Control Room Evacuation	S, A, E, P	8
e.	010 Pressurizer Pressure Control System Place LTOP in service	S, P, L	3
f.	004 Chemical and Volume Control System Perform a Rapid Boration during a plant shutdown	S, L, N	1
g.	026 Containment Spray Secure Containment Spray following an automatic actuation.	S, A, E, EN, N	5
In-Plant Systems [®] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i.	071 Waste Gas Disposal System Release the A Gas Decay Tank	D, R	9
j.	APE 067 Plant Fire On Site Secure Ventilation System During a Fire	D, E, R	8
k.	039 Main and Reheat Steam System Locally Operate the ARVs	P, E	4S
@	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 (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (EN)gineered safety feature (L)ow-Power / Shutdown (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator	4-6 / 4-6 (4) / 2-3 (2) $\leq 9 / \leq 8$ (3) / ≤ 4 (3) $\geq 1 / \geq 1$ (6) / ≥ 1 (3) - / - / ≥ 1 (2) (control room system) $\geq 1 / \geq 1$ (3) / ≥ 1 (1) $\geq 2 / \geq 2$ (4) / ≥ 1 (2) $\leq 3 / \leq 3$ (3) / ≤ 2 (0) (randomly selected) $\geq 1 / \geq 1$ (2) / ≥ 1 (2)

Facility:	Ginna	Scenario No.:	1	Op Test No.:	N10-1
Examiners:	_____	Operators:	_____	(SRO)	
	_____		_____	(RO)	
	_____		_____	(BOP)	
Initial Conditions:	The plant is at 49% power (BOL). The plant power was reduced several days ago due to a malfunction on the A MFW Pump. Corrective Maintenance has been completed, and the pump is ready to be restarted. RG&E Energy Control Center has requested that the electric plant be aligned to a 0/100 configuration on circuit 7T to allow the RG&E personnel to perform an insulator inspection on the 767 Line. Per Chemistry direction Normal Letdown is at 60 gpm.				
Turnover:	The following equipment is Out-Of-Service: The B AFW Pump is OOS for Bearing Replacement.				
Event No.	Malf. No.	Event Type*	Event Description		
1	NA	N-BOP N-SRO	Shift Electric Plant		
2	EDS07B	C-RO C-BOP C(TS)-SRO	Loss of B Instrument Bus		
3	PZR02D	I-RO I(TS)-SRO	Pressurizer Pressure (PT-449) fails High		
4	TUR05E TUR09D	R-RO C-BOP C-SRO	Main Turbine High Vibration/EHC control failure		
5	FDW09A	M-RO M-BOP M-SRO	Feed Line Rupture Inside Containment		
6	TUR02	NA	Main Turbine Failure to Auto Trip		
7	RPS07K	C-BOP	A AFW Pump Fails after start		
8	REM - FDW32	NA	TDAFW Pump overspeed trip		
9	OVR- FDW42A FDW15B	C-RO	Standby AFW fails to function		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

Facility: Ginna		Scenario No.: 2		Op Test No.: N10-1	
Examiners: _____		Operators: _____		(SRO)	
_____		_____		(RO)	
_____		_____		(BOP)	
Initial Conditions:		The Plant is at 100% power (EOL). Per the daily work schedule, CROI-7, Swapping Service Water Pumps, is to be performed this shift, swapping to A and D Service Water pumps.			
Turnover:		The following equipment is Out-Of-Service: The B SI Pump is OOS for Bearing Replacement.			
Event No.	Malf. No.	Event Type*	Event Description		
1	CLG09C CLG01D	N-BOP C(TS)-SRO	Swap Service Water Pumps/D Service Water Pump Trip		
2	CVC10A	I-RO I-SRO	VCT Level 112 Fails HIGH		
3	CVC12C	C-RO C-SRO	C Charging Pump trips		
4	TUR16B	I-BOP I-SRO	Turbine Impulse Pressure (PT-486) fails High		
5	A-FDW30 ROD03- G11	R-RO C-BOP C(TS)-SRO	A MFW Pump Oil Sump HI-LO Level/Rapid Downpower/Stuck Rod		
6	SGN04B	M-RO M-BOP M-SRO	SGTR		
7	RPS07A RPS07C RPS07D	C-RO	A SI Pump fails to start in AUTO C SI Pump fails to start in AUTO		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

Facility: Ginna		Scenario No.: 3		Op Test No.: N10-1	
Examiners: _____		Operators: _____		(SRO)	
_____		_____		(RO)	
_____		_____		(BOP)	
Initial Conditions:		The plant is at 70% power (MOL). The plant was taken to 50% due to a failure of the B MFW Pump. Corrective Maintenance was performed and plant power raised to 70% four days ago. The plant has been holding at this power level to observe the B MFW Pump operating characteristics. The plant power is now to be raised to 100% power using O-5.2, Load Ascension, Step 6.2.33, Placing Condensate Booster Pumps in service.			
Turnover:		The following equipment is Out-Of-Service: The B SI Pump is OOS for Bearing Replacement.			
Event No.	Malf. No.	Event Type*	Event Description		
1	NA	R-RO N-BOP N-SRO	Load Ascension/Start Condensate Booster Pumps		
2	GEN02	C-BOP C-SRO	Generator Hydrogen Temperature (Cold Gas) Instrument Fails High		
3	RCS11F	I-RO I(TS)-SRO	B Loop Thot RTD fails Low		
4	FDW07C	C-BOP C-SRO	FRV B Controller Fails Low		
5	ROD02-F2 ROD02-B8	C-RO C(TS)-SRO	Dropped Rod/2 nd Dropped Rod		
6	RCS03D	M-RO M-BOP M-SRO	Large Break LOCA on B Loop Tcold		
7	SIS02A	C – RO	Failure of A Train SIS in Auto		
8	RPS07F	C – RO	Failure of the B RHR Pump to start in AUTO		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

Facility: Ginna		Scenario No.: 4		Op Test No.: N10-1	
Examiners: _____		Operators: _____		(SRO)	
_____		_____		(RO)	
_____		_____		(BOP)	
Initial Conditions:		The Plant is at 100% power (MOL). It is expected that immediately after turnover the crew will swap Condensate Pumps per Maintenance Dept Work Order, and conduct routine Rod Control exercises on Control Bank D.			
Turnover:		The following equipment is Out-Of-Service: The B AFW Pump is OOS for Bearing Replacement.			
Event No.	Malf. No.	Event Type*	Event Description		
1	CND04B	N-BOP C-SRO	Swap Condensate Pumps (Start B, Secure C)/B Condensate Pump Trip		
2	ROD13C-K7	N-RO C(TS)-SRO	Rod Control Exercise/MRPI Failure		
3	PZR03C	I-RO I(TS)-SRO	Pressurizer Level (LT-428) Fails HIGH		
4	HTR02A	R-RO C-BOP C-SRO	Heater Drain Pump A trips/Rapid Downpower		
5	STM04C	C-BOP C-SRO	B SG ARV Controller (AOV-3410) fails in AUTO		
6	STM05A STM05B	M-RO M-BOP M-SRO	MSIVs Close		
7	STM09A STM09B	NA	SG Safeties lift/fail OPEN (1 per SG)		
8	RPS07M RPS07N	C-BOP	TDAFW Pump Steam Supply Valves Fail to Open in AUTO		
9	FDW11A	NA	A AFW Pump trips on Start		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

Facility: Ginna		Scenario No.: 5		Op Test No.: N10-1	
Examiners: _____		Operators: _____		(SRO)	
_____		_____		(RO)	
_____		_____		(BOP)	
Initial Conditions:		The plant is at 1 x 10 ⁻⁸ amps (BOL). The plant ran at 100% power for 12 days, and then tripped four days ago due to a MFW Pump failure. The repairs have been made and the plant is ready to be started back up. The crew will be directed to pull rods to the point of adding heat (POAH), and start the B MFW Pump, in accordance with O-1.2, Plant Startup From Hot Shutdown to Full Power Load, Step 6.3.4 and beyond.			
Turnover:		The following equipment is Out-Of-Service: The B Condensate Pump is OOS for Bearing Replacement.			
Event No.	Malf. No.	Event Type*	Event Description		
1	NA	R-RO N-SRO	Raise power to POAH		
2	NA	N-BOP N-SRO	Testing of the MFW Oil Pumps		
3	CLG10 CLG02A A-EDS33	C-RO C(TS)-SRO	480VAC Ground/A CCW Pump trips w/B CCW Pump fails to start in AUTO		
4	NIS05	C-BOP C(TS)-SRO	Loss of Compensating Voltage to Intermediate Range N35.		
5	EDS04D CLG01D	C-BOP C(TS)-SRO	Fault on 480V Bus 18/SW Pump D fails to start		
6	CVC07A	C-RO C-SRO	PCV-135 fails Closed		
7	RCS02D	M-RO M-BOP M-SRO	Loop B Cold Leg Break (1000 gpm)		
8	RPS05A RPS05B	C-RO	Failure of Reactor to Trip in AUTO and MANUAL		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					