Facility: POINT BEACH Date of Exam: 4/25-5/6/2011

Tier	Group	RO K/A Category Points											SRO-Only Points					
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A2		G*		Total
1. Emergency & Abnormal Plant Evolutions	1	3	2	3	N/A			4	2	N/A		4	18	3		3		6
	2	1	1	2				2	2			1	9	1		3		4
	Tier Totals	4	3	5				6	4			5	27	4		6		10
2. Plant Systems	1	4	2	2	2	3	2	2	2	2	4	3	28	2		3		5
	2	1		1	1	1	1		2	1	1	1	10	1	1	1		3
	Tier Totals	5	2	3	3	4	3	2	4	3	5	4	38	4		4		8
3. Generic Knowledge and Abilities Categories		1			2			3			4		10	1	2	3	4	7
		2			3			2			3			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.

ES-401	PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)								Form ES-401-2
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1				**R**			1.04 - Ability to operate and/or monitor the following as they apply to a reactor trip: RCP operation and flow rates	3.6	1
000008 Pressurizer Vapor Space Accident / 3				**R**			1.03 - Ability to operate and/or monitor the following as they apply to the Pressurizer Vapor Space Accident: Turbine bypass in manual control to maintain header pressure	2.8	1
000009 Small Break LOCA / 3						**R**	2.4.6 - Knowledge of EOP mitigation strategies.	3.7	1
000011 Large Break LOCA / 3		**R**					2.02 - Knowledge of the interrelations between the Large Break LOCA and the following: Pumps	2.6	1
000015/17 RCP Malfunctions / 4			**R**		**S**		K3.02 - Knowledge of the reasons for the following responses as they apply to the Reactor Coolant Pump Malfunctions: CCW lineup and flow paths to RCP oil coolers A2.02 - Ability to determine and interpret the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Abnormalities in RCP air vent flow paths and/or oil cooling system	3.0 3.0	1 1S
000022 Loss of Rx Coolant Makeup / 2					**R**		2.03 - Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Makeup: Failures of flow control valve or controller	3.1	1
000025 Loss of RHR System / 4					**S**	**R**	2.4.45 - Ability to prioritize and interpret the significance of each annunciator or alarm. 2.02 - Ability to determine and interpret the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Abnormalities in RCP air vent flow paths and/or oil cooling system	4.1 3.5	1 1S
000026 Loss of Component Cooling Water / 8						**R**	2.2.37 – Ability to determine operability and/or availability of safety related equipment.	3.6	1
000027 Pressurizer Pressure Control System Malfunction / 3				**R**			1.01 - Ability to operate and/or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: PZR heaters, sprays, and PORVs	4.0	1
000029 ATWS / 1						**S**	2.4.8 - Knowledge of how abnormal operating procedures are used in conjunction with EOPs.	4.5	1S
000038 Steam Gen. Tube Rupture / 3	**R**						1.03 - Knowledge of the operational implications of the following concepts as they apply to the SGTR: Natural circulation	3.9	1
000040 (BW/E05; CE/E05; **W/E12**) Steam Line Rupture - Excessive Heat Transfer / 4		**R**					2.2 - Knowledge of the interrelations between the Uncontrolled Depressurization of all Steam Generators 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	3.6	1
000054 (CE/E06) Loss of Main Feedwater / 4	**R**						1.02 - Knowledge of the operational implications of the following concepts as they apply to Loss of Main Feedwater (MFW): Effects of feedwater introduction on dry S/G	3.6	1

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E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000055 Station Blackout / 6				**R**			1.04 - Ability to operate and/or monitor the following as they apply to a Station Blackout: Reduction of loads on the battery	3.5	1
000056 Loss of Off-site Power / 6			**R**			**S**	3.02 - Knowledge of the reasons for the following responses as they apply to the Loss of Offsite Power: Actions contained in EOP for loss of offsite power	4.4	1
							2.2.38 - Knowledge of conditions and limitations in the facility license.	4.5	1S
000057 Loss of Vital AC Inst. Bus / 6						**R**	2.1.19 - Ability to use plant computer to obtain and evaluate parametric information on system or component status.	3.9	1
						S	2.4.11 - Knowledge of abnormal condition procedures	4.2	1S
000058 Loss of DC Power / 6	**R**						1.01 - Knowledge of the operational implications of the following concepts as they apply to Loss of DC Power: Battery charger equipment and instrumentation	2.8	1
000062 Loss of Nuclear Svc Water / 4							(Not Selected)		
000065 Loss of Instrument Air / 8							(Not Selected)		
W/E04 LOCA Outside Containment / 3			**R**				3.4 - Knowledge of the reasons for the following responses as they apply to the LOCA Outside Containment:: RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated	3.6	1
					S		2.1 - Ability to determine and interpret the following as they apply to the LOCA Outside Containment: Facility conditions and selection of appropriate procedures during abnormal and emergency operations	4.3	1S
W/E11 Loss of Emergency Coolant Recirc. / 4							(Not Selected)		
BW/E04; **W/E05** Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4					**R**		2.2 - Ability to determine and interpret the following as they apply to the Loss of Secondary Heat Sink: Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.7	1
000077 Generator Voltage and Electric Grid Disturbances / 6							(Not Selected)		
K/A Category Totals: SRO:	3	2	3	4	2 / 3	4 / 3	Group Point Total:		18 / 6

ES-401	PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)						Form ES-401-2		
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000001 Continuous Rod Withdrawal / 1							(Not Selected)		
000003 Dropped Control Rod / 1				**R**			1.06 - Ability to operate and/or monitor the following as they apply to the Dropped Control Rod: RCS pressure and temperature	4.0	1
000005 Inoperable/Stuck Control Rod / 1							(Not Selected)		
000024 Emergency Boration / 1						**S**	2.4.47 - Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	4.2	1S
000028 Pressurizer Level Malfunction / 2							(Not Selected)		
000032 Loss of Source Range NI / 7							(Not Selected)		
000033 Loss of Intermediate Range NI / 7							(Not Selected)		
000036 (BW/A08) Fuel Handling Accident / 8		**R**					2.02 - Knowledge of the interrelations between the Fuel Handling Incidents and the following: Radiation monitoring equipment (portable and installed)	3.4	1
000037 Steam Generator Tube Leak / 3				**R**			1.11 - Ability to operate and/or monitor the following as they apply to the Steam Generator Tube Leak: PZR level indicator	3.4	1
000051 Loss of Condenser Vacuum / 4					**R**		2.02 - Ability to determine and interpret the following as they apply to the Loss of Condenser Vacuum: Conditions requiring reactor and/or turbine trip	3.9	1
000059 Accidental Liquid RadWaste Rel. / 9							(Not Selected)		
000060 Accidental Gaseous Radwaste Rel. / 9						**S**	2.4.41 - Knowledge of the emergency action level thresholds and classifications.	4.6	1S
000061 ARM System Alarms / 7			**R**				3.02 - 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	1
000067 Plant Fire On-site / 8						**S**	2.4.8 - Knowledge of how abnormal operating procedures are used in conjunction with EOPs.	4.5	1S
000068 (BW/A06) Control Room Evac. / 8			**R**				3.07 - Knowledge of the reasons for the following responses as they apply to the Control Room Evacuation: Maintenance of S/G level, using AFW flow control valves	4.0	1
000069 (W/E14) Loss of CTMT Integrity / 5							(Not Selected)		
000074 (**W/E06**&E07) Inad. Core Cooling / 4						**R**	2.4.31 - Knowledge of annunciators alarms and indications, and use of the response instructions.	4.2	1
000076 High Reactor Coolant Activity / 9					**R**		2.02 - Ability to determine and interpret the following as they apply to the High Reactor Coolant Activity: Corrective actions required for high fission product activity in RCS	2.8	1

ES-401	PWR Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)							Form ES-401-2	
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
W/EO1 & E02 Rediagnosis & SI Termination / 3					**S**		2.2 Ability to determine and interpret the following as they apply to the Reactor Trip or Safety Injection/Rediagnosis: Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	3.3	1S
W/E13 Steam Generator Over-pressure / 4							(Not Selected)		
W/E15 Containment Flooding / 5							(Not Selected)		
W/E16 High Containment Radiation / 9							(Not Selected)		
BW/A01 Plant Runback / 1							(Not Applicable to plant)		
BW/A02&A03 Loss of NNI-X/Y / 7							(Not Applicable to plant)		
BW/A04 Turbine Trip / 4							(Not Applicable to plant)		
BW/A05 Emergency Diesel Actuation / 6							(Not Applicable to plant)		
BW/A07 Flooding / 8							(Not Applicable to plant)		
BW/E03 Inadequate Subcooling Margin / 4							(Not Applicable to plant)		
BW/E08; W/E03 LOCA Cooldown - Depress. / 4							(Not Selected)		
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4							(Not Selected)		
BW/E13&E14 EOP Rules and Enclosures							(Not Applicable to plant)		
CE/A11; **W/E08** RCS Overcooling - PTS / 4	**R**						1.1 - Knowledge of the operational implications of the following concepts as they apply to the Pressurized Thermal Shock: Components, capacity, and function of emergency systems	3.5	1
CE/A16 Excess RCS Leakage / 2							(Not Applicable to plant)		
CE/E09 Functional Recovery							(Not Applicable to plant)		
K/A Category Point Totals:	1	1	2	2	2 / 1	1 / 3	Group Point Total:		9 / 4

ES-401	PWR Examination Outline Plant Systems - Tier 2/Group 1 (RO / SRO)												Form ES-401-2	
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
003 Reactor Coolant Pump			**R**			**R**						3.02 - Knowledge of the effect that a loss or malfunction of the RCPS will have on the following: S/G 6.14 - Knowledge of the effect of a loss or malfunction of the following will have on the RCPS: Starting requirements	3.5 2.6	2
004 Chemical and Volume Control					**R**							5.14 - Knowledge of the operational implications of the following concepts as they apply to the CVCS: Reduction process of gas concentration in RCS: vent-accumulated non-condensable gases from PZR bubble space, depressurized during cooldown or by alternately heating and cooling (spray) within allowed pressure band (drive more gas out of solution)	2.5	1
005 Residual Heat Removal					**R**					**R**		5.01 – Knowledge of the operational implications of the following concepts as they apply to the RHRS: Nil ductility transition temperature (brittle fracture) 4.03 - Ability to manually operate and/or monitor in the control room: RHR temperature, PZR heaters and flow, and nitrogen	2.6 2.8	2
006 Emergency Core Cooling		**R**										2.02 - Knowledge of bus power supplies to the following: Valve operators for accumulators	2.5	1
007 Pressurizer Relief/Quench Tank							**R**				**R**	1.01 - Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRTS controls including: Maintaining quench tank water level within limits 2.1.20 - Ability to interpret and execute procedure steps.	2.9 4.6	2
008 Component Cooling Water							**R**					1.03 - Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CCWS controls including: CCW pressure	2.7	1
010 Pressurizer Pressure Control					**R**						**S**	5.01 - Knowledge of the operational implications of the following concepts as they apply to the PZR PCS: Determination of condition of fluid in PZR, using steam tables 2.2.22 - Knowledge of limiting conditions for operations and safety limits.	3.5 4.7	1 1S

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System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
012 Reactor Protection									**R**			3.02 - Ability to monitor automatic operation of the RPS, including: Bistables	3.6	1
013 Engineered Safety Features Actuation						**R**						6.01 - Knowledge of the effect of a loss or malfunction of the following will have on the ESFAS: Sensors and detectors	2.7	1
022 Containment Cooling		**R**									**R**	2.01 - Knowledge of bus power supplies to the following: Containment cooling fans 2.4.2 - Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.	3.0 4.5	2
025 Ice Condenser												(Not Applicable to plant – No system)		
026 Containment Spray								**R**			**S**	2.08 - 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: Safe securing of containment spray (when it can be done) 2.2.25 - Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.2 4.2	1 1S
039 Main and Reheat Steam	**R**							**S**				1.07 - Knowledge of the physical connections and/or cause-effect relationships between the MRSS and the following systems: AFW 2.04 - Ability to (a) predict the impacts of the following malfunctions 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: Malfunctioning steam dump	3.4 3.7	1 1S
059 Main Feedwater	**R**							**S**				1.02 - Knowledge of the physical connections and/or cause-effect relationships between the MFW System and the following systems: AFW System 2.03 - Ability to (a) predict the impacts of the following malfunctions or operations on the MFW System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Overfeeding event	3.4 3.1	1 1S
061 Auxiliary/Emergency Feedwater				**R**								4.03 - Knowledge of AFW System design feature(s) and/or interlock(s) which provide for the following: Automatic blowdown/sample isolation	2.7	1

ES-401	PWR Examination Outline Plant Systems - Tier 2/Group 1 (RO / SRO)												Form ES-401-2	
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
062 AC Electrical Distribution				**R**							**S**	4.05 - Knowledge of A.C. Distribution System design feature(s) and/or interlock(s) which provide for the following: Paralleling of ac sources (synchroscope) 2.2.38 - Knowledge of conditions and limitations in the facility license.	2.7 4.5	1 1S
063 DC Electrical Distribution									**R**			3.01 - Ability to monitor automatic operation of the D.C. Electrical System, including: Meters, annunciators, dials, recorders, and indicating lights	2.7	1
064 Emergency Diesel Generator								**R**		**R**		2.19 - Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Consequences of high VARS on ED/G integrity 4.05 - Ability to manually operate and/or monitor in the control room: Transfer of ED/G control between manual and automatic	2.5 3.1	2
073 Process Radiation Monitoring										**R**		4.01 - Ability to manually operate and/or monitor in the control room: Effluent release	3.9	1
076 Service Water	**R**										**R**	1.01 - Knowledge of the physical connections and/or cause-effect relationships between the SWS and the following systems: CCW system 2.4.50 - Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	3.4 4.2	2
078 Instrument Air	**R**									**R**		1.02 - Knowledge of the physical connections and/or cause-effect relationships between the IAS and the following systems: Service air 4.01 - Ability to manually operate and/or monitor in the control room: Pressure gauges	2.7 3.1	2
103 Containment			**R**									3.03 - Knowledge of the effect that a loss or malfunction of the Containment System will have on the following: Loss of containment integrity under refueling operations	3.7	1
K/A Category Point Totals:	4	2	2	2	3	2	2	2 / 2	2	4	3 / 3	Group Point Total:		28 / 5

ES-401	PWR Examination Outline Plant Systems - Tier 2/Group 2 (RO / SRO)											Form ES-401-2		
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
001 Control Rod Drive												(Not Selected)		
002 Reactor Coolant								**R**			**S**	2.03 - Ability to (a) predict the impacts of the following malfunctions or operations on the RCS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of forced circulation 2.1.7 - Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.1 4.7	1 1S
011 Pressurizer Level Control												(Not Selected)		
014 Rod Position Indication			**R**									3.02 - Knowledge of the effect that a loss or malfunction of the RPIS will have on the following: Plant computer	2.5	1
015 Nuclear Instrumentation										**R**		4.02 - Ability to manually operate and/or monitor in the control room: NIS indicators	3.9	1
016 Non-nuclear Instrumentation												(Not Selected)		
017 In-core Temperature Monitor								**S**				2.01 - Ability to (a) predict the impacts of the following malfunctions or operations on the ITM System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Thermocouple open and short circuits	3.5	1S
027 Containment Iodine Removal												(Not Applicable to plant – No system)		
028 Hydrogen Recombiner and Purge Control					**R**							5.03 – Knowledge of the operational implications of the following concepts as they apply to the HRPS: Sources of hydrogen in containment	2.9	1
029 Containment Purge								**R**				2.03 - Ability to (a) predict the impacts of the following malfunctions or operations on the Containment Purge System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Startup operations and the associated required valve lineups	2.7	1
033 Spent Fuel Pool Cooling												(Not Selected)		
034 Fuel Handling Equipment					**S**						**R**	2.1.32 – Ability to explain and apply system limits and precautions 5.03 - Knowledge of the operational implications of the following concepts as they apply to the Fuel Handling System: Residual heat removal; decay	3.8 2.7	1 1S

ES-401	PWR Examination Outline Plant Systems - Tier 2/Group 2 (RO / SRO)												Form ES-401-2	
System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	IR	#
035 Steam Generator												(Not Selected)		
041 Steam Dump/Turbine Bypass Control						**R**						6.03 - Knowledge of the effect of a loss or malfunction of the following will have on the SDS: Controller and positioners, including ICS, S/G, CRDS	2.7	1
045 Main Turbine Generator												(Not Selected)		
055 Condenser Air Removal									**R**			3.03 - Ability to monitor automatic operation of the CARS, including: Automatic diversion of CARS exhaust	2.5	1
056 Condensate	**X**											1.03 - Knowledge of the physical connections and/or cause-effect relationships between the Condensate System and the following systems: MFW	2.6	1
068 Liquid Radwaste												(Not Selected)		
071 Waste Gas Disposal												(Not Selected)		
072 Area Radiation Monitoring												(Not Selected)		
075 Circulating Water												(Not Selected)		
079 Station Air												(Not Selected)		
086 Fire Protection				**X**								4.01 - Knowledge of Fire Protection System design feature(s) and/or interlock(s) which provide for the following: Adequate supply of water for FPS	3.1	1
K/A Category Point Totals:	1	-	1	1	1 / 1	1	-	2 / 1	1	1	1 / 1	Group Point Total:		10 / 3