Facility: Point Beach Nuclear Plant, Units 1 and 2 Date of Exam: July 26 – August 6, 2021

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 and Abnormal Plant Evolutions	1	3	3	3	N/A			3	3	N/A		3	18	3	3	6
	2	2	1	2				2	1			1	9	2	2	4
	Tier Totals	5	4	5				5	4			4	27	5	5	10
2. Plant Systems	1	2	2	2	3	2	3	3	2	3	3	3	28	2	3	5
	2	1	1	1	1	1	0	1	1	1	1	1	10	0 2	1	3
	Tier Totals	3	3	3	4	3	3	4	3	4	4	4	38	4	4	8
3. Generic Knowledge and Abilities Categories		1			2			3			4		10	1 2 3 4		7
		3			3			1			3			2 1 2 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 outline sections (i.e., except for one category in Tier 3 of the SRO-only section, the "Tier Totals" in each K/A category shall not be less than two). (One Tier 3 radiation control K/A is allowed if it is replaced by a K/A from another Tier 3 category.)
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 outline. Systems or evolutions that do not apply at the facility should be deleted with justification. 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' 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 a category 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.

G* Generic K/As

* These systems/evolutions must be included as part of the sample (as applicable to the facility) when Revision 3 of the K/A catalog is used to develop the sample plan. They are not required to be included when using earlier revisions of the K/A catalog.

** These systems/evolutions may be eliminated from the sample (as applicable to the facility) when Revision 3 of the K/A catalog is used to develop the sample plan.

ES-401	PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions—Tier 1/Group 1 (RO)									
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
000007 (EPE 7; ~~BW E02&E10; CE E02~~) Reactor Trip, Stabilization, Recovery / 1		.03					EK2.03 – Knowledge of the interrelations between a Reactor Trip and the following: Reactor trip status panel (CFR 41.7 / 45.7)	3.5	1 (1)
000008 (APE 8) Pressurizer Vapor Space Accident / 3			.03				AK3.03 – Knowledge of the reasons for the following responses as they apply to the Pressurizer Vapor Space Accident: Actions contained in EOP for PZR vapor space accident/LOCA (CFR 41.5, 41.10 / 45.6 / 45.13)	4.1	1 (2)
000009 (EPE 9) Small Break LOCA / 3				.09			EA1.09 – Ability to operate and monitor the following as they apply to a small break LOCA: RCP (CFR 41.5 / 45.5 / 45.6)	4.1	1 (3)
000011 (EPE 11) Large Break LOCA / 3					.13		EA2.13 – Ability to determine or interpret the following as they apply to a Large Break LOCA: Difference between overcooling and LOCA indications (CFR 43.5 / 45.13)	3.7*	1 (4)
000015 (APE 15) Reactor Coolant Pump Malfunctions / 4						.4.6	Generic K/A 2.4.6 – Knowledge of EOP mitigation strategies. (CFR: 41.10 / 43.5 / 45.13)	3.7	1 (5)
000022 (APE 22) Loss of Reactor Coolant Makeup / 2	.02						AK1.02 – Knowledge of the operational implications of the following concepts as they apply to Loss of Reactor Coolant Makeup: Relationship of charging flow to pressure differential between charging and RCS (CFR 41.8 / 41.10 / 45.3)	2.8	1 (6)
000025 (APE 25) Loss of Residual Heat Removal System / 4		.03					AK2.03 – Knowledge of the interrelations between Loss of Residual Heat Removal System and the following: Service water or closed cooling water pumps (CFR 41.7 / 45.7)	2.7	1 (7)
000026 (APE 26) Loss of Component Cooling Water / 8			.03				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 (CFR 41.5 / 41.10 / 45.6 / 45.13)	4.0	1 (8)
000027 (APE 27) Pressurizer Pressure Control System Malfunction / 3				.04			AA1.04 – Ability to operate and/or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: Pressure recovery, using emergency-only heaters (CFR 41.5 / 45.5 / 45.6)	3.9*	1 (9)
000029 (EPE 29) Anticipated Transient Without Scram / 1					.08		EA2.08 – Ability to determine or interpret the following as they apply to an ATWS: Rod bank step counters and RPI (CFR 43.5 / 45.13)	3.4	1 (10)
000038 (EPE 38) Steam Generator Tube Rupture / 3						.4.21	Generic K/A 2.4.21 – 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. (CFR: 41.7 / 43.5 / 45.12)	4.0	1 (11)
000040 (APE 40; ~~BW E05; CE E05~~; W E12) Steam Line Rupture—Excessive Heat Transfer / 4									

000054 (APE 54; ~~CE E06~~) Loss of Main Feedwater /4			.03				AK3.03 – Knowledge of the reasons for the following responses as they apply to the Loss of Main Feedwater (MFW): Manual control of AFW flow control valves (CFR 41.5, 41.10 / 45.6 / 45.13)	3.8	1 (12)
000055 (EPE 55) Station Blackout / 6	.01						EK1.01 – Knowledge of the operational implications of the following concepts as they apply to the Station Blackout: Effect of battery discharge rates on capacity (CFR 41.8 / 41.10 / 45.3)	3.3	1 (13)
000056 (APE 56) Loss of Offsite Power / 6									
000057 (APE 57) Loss of Vital AC Instrument Bus / 6						.1.28	Generic K/A 2.1.28 – Knowledge of the purpose and function of major components and controls. (CFR 41.7)	4.1	1 (14)
000058 (APE 58) Loss of DC Power / 6									
000062 (APE 62) Loss of Nuclear Service Water / 4									
000065 (APE 65) Loss of Instrument Air / 8				.02			AA1.02 – Ability to operate and / or monitor the following as they apply to the Loss of Instrument Air: Components served by instrument air to minimize drain on system (CFR 41.5 / 45.5 / 45.6)	2.6	1 (15)
000077 (APE 77) Generator Voltage and Electric Grid Disturbances / 6					.09		AA2.09 – Ability to determine and interpret the following as they apply to Generator Voltage and Electric Grid Disturbances: Operational status of the emergency diesel generators (CFR 41.5 and 43.5 / 45.5, 45.7, and 45.8)	3.9	1 (16)
(W E04) LOCA Outside Containment / 3									
(W E11) Loss of Emergency Coolant Recirculation / 4	.3						EK1.3 – Knowledge of the operational implications of the following concepts as they apply to the (Loss of Emergency Coolant Recirculation): Annunciators and conditions indicating signals, and remedial actions associated with the (Loss of Emergency Coolant Recirculation) (CFR 41.8 / 41.10 / 45.3)	3.6	1 (17)
(~~BW E04;~~ W E05) Inadequate Heat Transfer—Loss of Secondary Heat Sink / 4		.2					EK2.2 – Knowledge of the interrelations between (Loss of Secondary Heat Sink) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal system, and relations between the proper operation of these systems to the operation of the facility (CFR 41.7 / 45.7)	3.9	1 (18)
K/A Category Totals:	3	3	3	3	3	3	Group Point Total:		18

ES-401	PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions—Tier 1/Group 2 (RO)									
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
000001 (APE 1) Continuous Rod Withdrawal / 1				.02			AA1.02 – Ability to operate and monitor the following as they apply to the Continuous Rod Withdrawal: Rod in-out-hold switch (CFR 41.5 / 45.5 / 45.6)	3.6	1 (19)
000003 (APE 3) Dropped Control Rod / 1									
000005 (APE 5) Inoperable/Stuck Control Rod / 1	.03						AK1.03 – Knowledge of the operational implications of the following concepts as they apply to Inoperable/Stuck Control Rod: Xenon transient (CFR 41.8 / 41.10 / 45.3)	3.2	1 (20)
000024 (APE 24) Emergency Boration / 1									
000028 (APE 28) Pressurizer (PZR) Level Control Malfunction / 2									
000032 (APE 32) Loss of Source Range Nuclear Instrumentation / 7			.01				AK3.01 – Knowledge of the reasons for the following responses as they apply to the Loss of Source Range Nuclear Instrumentation: Startup termination on source-range loss (CFR 41.5, 41.10 / 45.6 / 45.13)	3.2	1 (21)
000033 (APE 33) Loss of Intermediate Range Nuclear Instrumentation / 7									
000036 (APE 36; ~~BW/A08~~) Fuel-Handling Incidents / 8					.02		AA2.02 – Ability to determine and interpret the following as they apply to the Fuel Handling Incidents: Occurrence of a fuel handling incident (CFR 43.5 / 45.13)	3.4	1 (22)
000037 (APE 37) Steam Generator Tube Leak / 3									
000051 (APE 51) Loss of Condenser Vacuum / 4									
000059 (APE 59) Accidental Liquid Radwaste Release / 9									
000060 (APE 60) Accidental Gaseous Radwaste Release / 9									
000061 (APE 61) Area Radiation Monitoring System Alarms / 7									
000067 (APE 67) Plant Fire on Site / 8	.02						AK1.02 – Knowledge of the operational implications of the following concepts as they apply to Plant Fire on Site: Fire fighting (CFR 41.8 / 41.10 / 45.3)	3.1	1 (23)
000068 (APE 68; ~~BW A06~~) Control Room Evacuation / 8									
000069 (~~APE 69~~; W E14) Containment High Pressure / 5						.4.4	Generic K/A 2.4.4 – Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures. (CFR 41.10 / 43.2 / 45.6)	4.5	1 (24)
000074 (EPE 74; W E06 & E07) Inadequate Core Cooling / 4									
000076 (APE 76) High Reactor Coolant Activity / 9									
000078 (APE 78*) RCS Leak / 3									
(W E01 & E02) Rediagnosis & SI Termination / 3									

(W E13) Steam Generator Overpressure / 4			.3				EK3.3 – Knowledge of the reasons for the following responses as they apply to the (Steam Generator Overpressure): Manipulation of controls required to obtain desired operating results during abnormal and emergency situations (CFR 41.5 / 41.10 / 45.6, 45.13)	3.2	1 (25)
(W E15) Containment Flooding / 5									
(W E16) High Containment Radiation /9									
(BW A01) Plant Runback / 1									
(BW A02 & A03) Loss of NNI-X/Y/7									
(BW A04) Turbine Trip / 4									
(BW A05) Emergency Diesel Actuation / 6									
(BW A07) Flooding / 8									
(BW E03) Inadequate Subcooling Margin / 4									
(~~BW E08;~~ W E03) LOCA Cooldown—Depressurization / 4		.1					EK2.1 – Knowledge of the interrelations between (LOCA Cooldown and Depressurization) and the following: Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features (CFR 41.7 / 45.7)	3.6	1 (26)
(~~BW E09; CE A13**~~; W E09 & E10) Natural Circulation/4									
(BW E13 & E14) EOP Rules and Enclosures									
(~~CE A11**;~~ W E08) RCS Overcooling—Pressurized Thermal Shock / 4				.2			EA1.2 – Ability to operate and/or monitor the following as they apply to the (Pressurized Thermal Shock): Operating behavior characteristics of the facility (CFR 41.7 / 45.5 / 45.6)	3.6	1 (27)
(CE A16) Excess RCS Leakage / 2									
(CE E09) Functional Recovery									
(CE E13*) Loss of Forced Circulation/LOOP/Blackout / 4									
K/A Category Point Totals:	2	1	2	2	1	1	Group Point Total:		9

ES-401 PWR Examination Outline Form ES-401-2
Plant Systems—Tier 2/Group 1 (RO)

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	K/A Topic(s)	IR	#
003 (SF4P RCP) Reactor Coolant Pump			.02				.07					K3.02 – Knowledge of the effect that a loss or malfunction of the RCPS will have on the following: S/G (CFR 41.7 / 45.6)	3.5	1 (28)
												A1.07 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RCPS controls including: RCS temperature and pressure (CFR 41.5 / 45.5)	3.4*	1 (29)
004 (SF1; SF2 CVCS) Chemical and Volume Control				.03						.18		K4.03 – Knowledge of CVCS design feature(s) and/or interlock(s) which provide for the following: Protection of ion exchangers (high letdown temperature will isolate ion exchangers) (CFR 41.7)	2.8	1 (30)
												A4.18 – Ability to manually operate and/or monitor in the control room: Emergency borate valve (CFR 41.7 / 45.5 to 45.8)	4.3	1 (31)
005 (SF4P RHR) Residual Heat Removal					.02							K5.02 – Knowledge of the operational implications of the following concepts as they apply to RHRS: Need for adequate subcooling (CFR 41.5 / 45.7)	3.4	1 (32)
006 (SF2; SF3 ECCS) Emergency Core Cooling						.13					.2.22	K6.13 – Knowledge of the effect of a loss or malfunction of the following will have on the ECCS: Pumps (CFR 41.7 / 45.7)	2.8	1 (33)
												Generic K/A 2.2.22 – Knowledge of limiting conditions for operations and safety limits. (CFR: 41.5 / 43.2 / 45.2)	4.0	1 (34)
007 (SF5 PRTS) Pressurizer Relief/Quench Tank							.01					A1.01 – 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 (CFR 41.5 / 45.5)	2.9	1 (35)
008 (SF8 CCW) Component Cooling Water								.03				A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on CCWS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: High/low CCW temperature (CFR 41.5 / 43.5 / 45.3 / 45.13)	3.0	1 (36)
010 (SF3 PZR PCS) Pressurizer Pressure Control									.02			A3.02 – Ability to monitor automatic operation of the PZR PCS, including: PZR pressure (CFR 41.7 / 45.5)	3.6	1 (37)

012 (SF7 RPS) Reactor Protection						.11				.06		K6.11 – Knowledge of the effect of a loss or malfunction of the following will have on the RPS: Trip setpoint calculators (CFR 41.7 / 45.7) A4.06 – Ability to manually operate and/or monitor in the control room: Reactor trip breakers (CFR 41.7 / 45.5 to 45.8)	2.9* 4.3	1 (38) 1 (39)
013 (SF2 ESFAS) Engineered Safety Features Actuation				.05							.1.20	K4.05 – Knowledge of ESFAS design feature(s) and/or interlock(s) which provide for the following: Core spray actuation signal reset (CFR 41.7) Generic K/A 2.1.20 – Ability to interpret and execute procedure steps. (CFR 41.10 / 43.5 / 45.12)	4.0* 4.6	1 (40) 1 (41)
022 (SF5 CCS) Containment Cooling	.01											K1.01 – Knowledge of the physical connections and/or cause-effect relationships between the CCS and the following systems: SWS/cooling system (CFR 41.2 to 41.9 / 45.7 to 45.8)	3.5	1 (42)
025 (SF5 ICE) Ice Condenser														
026 (SF5 CSS) Containment Spray		.01							.01			K2.01 – Knowledge of the bus power supplies to the following: Containment spray pumps (CFR 41.7) A3.01 – Ability to monitor automatic operation of the CSS, including: Pump starts and correct MOV positioning (CFR 41.7 / 45.5)	3.4* 4.3	1 (43) 1 (44)
039 (SF4S MSS) Main and Reheat Steam			.05									K3.05 – Knowledge of the effect that a loss or malfunction of the MRSS will have on the following: RCS (CFR 41.7 / 45.6)	3.6	1 (45)
059 (SF4S MFW) Main Feedwater				.19								K4.19 – Knowledge of MFW design feature(s) and/or interlock(s) which provide for the following: Automatic feedwater isolation of MFW (CFR 41.7)	3.2	1 (46)
061 (SF4S AFW) Auxiliary/Emergency Feedwater					.03							K5.03 – Knowledge of the operational implications of the following concepts as they apply to AFW: Pump head effects when control valve is shut (CFR 41.5 / 45.7)	2.6	1 (47)
062 (SF6 ED AC) AC Electrical Distribution							.01					A1.01 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the AC distribution system controls including: Significance of D/G load limits (CFR 41.5 / 45.5)	3.4	1 (48)
063 (SF6 ED DC) DC Electrical Distribution								.01				A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the DC distribution system, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Grounds (CFR 41.5 / 43.5 / 45.3 / 45.13)	2.5	1 (49)

064 (SF6 EDG) Emergency Diesel Generator						.08			.05			K6.08 – Knowledge of the effect of a loss or malfunction of the following will have on the ED/G system: Fuel oil storage tanks (CFR 41.7 / 45.7) A3.05 – Ability to monitor automatic operation of the ED/G system, including: Operation of the governor control of frequency and voltage control in parallel operation (CFR 41.7 / 45.5)	3.2 2.8	1 (50) 1 (51)
073 (SF7 PRM) Process Radiation Monitoring										.02		A4.02 – Ability to manually operate and/or monitor in the control room: Radiation monitoring system control panel (CFR 41.7 / 45.5 to 45.8)	3.7	1 (52)
076 (SF4S SW) Service Water											.2.39	Generic K/A 2.2.39 – Knowledge of less than or equal to one hour Technical Specification action statements for systems. (CFR 41.7 / 41.10 / 43.2 / 45.13)	3.9	1 (53)
078 (SF8 IAS) Instrument Air		.01										K2.01 – Knowledge of the bus power supplies to the following: Instrument air compressor (CFR 41.7)	2.7	1 (54)
103 (SF5 CNT) Containment	.02											K1.02 – Knowledge of the physical connections and/or cause-effect relationships between the containment system and the following systems: Containment isolation/containment integrity (CFR 41.2 to 41.9 / 45.7 to 45.8)	3.9	1 (55)
053 (SF1; SF4P ICS*) Integrated Control														
K/A Category Point Totals:	2	2	2	3	2	3	3	2	3	3	3	Group Point Total:		28

ES-401	PWR Examination Outline Plant Systems—Tier 2/Group 2 (RO)											Form ES-401-2	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	K/A Topic(s)	IR	#
001 (SF1 CRDS) Control Rod Drive	.05											K1.05 – Knowledge of the physical connections and/or cause-effect relationships between the CRDS and the following systems: NIS and RPS (CFR 41.2 to 41.9 / 45.7 to 45.8)	4.5	1 (56)
002 (SF2; SF4P RCS) Reactor Coolant														
011 (SF2 PZR LCS) Pressurizer Level Control		.02										K2.02 – Knowledge of the bus power supplies to the following: PZR heaters (CFR 41.7)	3.1	1 (57)
014 (SF1 RPI) Rod Position Indication														
015 (SF7 NI) Nuclear Instrumentation			.02									K3.02 – Knowledge of the effect that a loss or malfunction of the NIS will have on the following: CRDS (CFR 41.7 / 45.6)	3.3*	1 (58)
016 (SF7 NNI) Nonnuclear Instrumentation														
017 (SF7 ITM) In-Core Temperature Monitor				.03								K4.03 – Knowledge of ITM system design feature(s) and/or interlock(s) which provide for the following: Range of temperature indication (CFR 41.7)	3.1	1 (59)
027 (SF5 CIRS) Containment Iodine Removal														
028 (SF5 HRPS) Hydrogen Recombiner and Purge Control					.03							K5.03 – Knowledge of the operational implications of the following concepts as they apply to HRPS: Sources of hydrogen within containment (CFR 41.5 / 45.7)	2.9	1 (60)
029 (SF8 CPS) Containment Purge														
033 (SF8 SFPCS) Spent Fuel Pool Cooling							.02					A1.02 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Spent Fuel Pool Cooling System controls including: Radiation monitoring systems (CFR 41.5 / 45.5)	2.8	1 (61)
034 (SF8 FHS) Fuel-Handling Equipment														
035 (SF 4P SG) Steam Generator								.04				A2.04 – Ability to (a) predict the impacts of the following malfunctions or operations on the S/G system, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Steam flow/feed mismatch (CFR 41.5 / 43.5 / 45.3 / 45.5)	3.6	1 (62)
041 (SF4S SDS) Steam Dump/Turbine Bypass Control														
045 (SF 4S MTG) Main Turbine Generator									.04			A3.04 – Ability to monitor automatic operation of the MT/G system, including: T/G trip (CFR 41.7 / 45.5)	3.4	1 (63)
055 (SF4S CARS) Condenser Air Removal														
056 (SF4S CDS) Condensate														

068 (SF9 LRS) Liquid Radwaste										.03		A4.03 – Ability to manually operate and/or monitor in the control room: Stoppage of release if limits exceeded (CFR 41.7 / 45.5 to 45.8)	3.9	1 (64)
071 (SF9 WGS) Waste Gas Disposal														
072 (SF7 ARM) Area Radiation Monitoring														
075 (SF8 CW) Circulating Water											.1.27	Generic K/A 2.1.27 – Knowledge of system purpose and/or function. (CFR 41.7)	3.9	1 (65)
079 (SF8 SAS**) Station Air														
086 Fire Protection														
050 (SF 9 CRV*) Control Room Ventilation														
K/A Category Point Totals:	1	1	1	1	1	0	1	1	1	1	1	Group Point Total:		10

ES-401	PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions—Tier 1/Group 1 (SRO)									
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
000007 (EPE 7; ~~BW E02&E10; CE E02~~) Reactor Trip, Stabilization, Recovery / 1									
000008 (APE 8) Pressurizer Vapor Space Accident / 3									
000009 (EPE 9) Small Break LOCA / 3									
000011 (EPE 11) Large Break LOCA / 3									
000015 (APE 15) Reactor Coolant Pump Malfunctions / 4									
000022 (APE 22) Loss of Reactor Coolant Makeup / 2									
000025 (APE 25) Loss of Residual Heat Removal System / 4									
000026 (APE 26) Loss of Component Cooling Water / 8						2.44	Generic K/A 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. (CFR: 41.5 / 43.5 / 45.12)	4.4	1 (76)
000027 (APE 27) Pressurizer Pressure Control System Malfunction / 3									
000029 (EPE 29) Anticipated Transient Without Scram / 1									
000038 (EPE 38) Steam Generator Tube Rupture / 3									
000040 (~~APE 40~~; ~~BW E05; CE E05~~; W E12) Uncontrolled Depressurization of all Steam Generators / 4						.4.45	Generic K/A 2.4.45 – Ability to prioritize and interpret the significance of each annunciator or alarm (CFR 41.10 / 43.5 / 45.3 / 45.12)	4.3	1 (77)
000054 (APE 54; ~~CE E06~~) Loss of Main Feedwater /4									
000055 (EPE 55) Station Blackout / 6									
000056 (APE 56) Loss of Offsite Power / 6					.44		AA2.44 – Ability to determine and interpret the following as they apply to the Loss of Offsite Power: Indications of loss of offsite power (CFR 43.5 / 45.13)	4.5	1 (78)
000057 (APE 57) Loss of Vital AC Instrument Bus / 6									
000058 (APE 58) Loss of DC Power / 6						.1.23	Generic K/A 2.1.23 – Ability to perform specific system and integrated plant procedures during all modes of plant operation. (CFR 41.10 / 43.5 / 45.2 / 45.6)	4.4	1 (79)
000062 (APE 62) Loss of Nuclear Service Water / 4					.06		AA2.06 – Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: The length of time after the loss of SWS flow to a component before that component may be damaged (CFR 43.5 / 45.13)	3.1*	1 (80)
000065 (APE 65) Loss of Instrument Air / 8									
000077 (APE 77) Generator Voltage and Electric Grid Disturbances / 6									
(W E04) LOCA Outside Containment / 3					.1		EA2.1 – 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 (CFR 43.5 / 45.13)	4.3	1 (81)

(W E11) Loss of Emergency Coolant Recirculation / 4									
(~~BW E04~~; W E05) Inadequate Heat Transfer—Loss of Secondary Heat Sink / 4									
K/A Category Totals:					3	3	Group Point Total:		6

ES-401	PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions—Tier 1/Group 2 (SRO)									
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G*	K/A Topic(s)	IR	#
000001 (APE 1) Continuous Rod Withdrawal / 1									
000003 (APE 3) Dropped Control Rod / 1									
000005 (APE 5) Inoperable/Stuck Control Rod / 1									
000024 (APE 24) Emergency Boration / 1									
000028 (APE 28) Pressurizer (PZR) Level Control Malfunction / 2					.12		AA2.12 – Ability to determine and interpret the following as they apply to the Pressurizer Level Control Malfunctions: Cause for PZR level deviation alarm: controller malfunction or other instrumentation malfunction (CFR 43.5 / 45.13)	3.5	1 (82)
000032 (APE 32) Loss of Source Range Nuclear Instrumentation / 7									
000033 (APE 33) Loss of Intermediate Range Nuclear Instrumentation / 7									
000036 (APE 36; BW/A08) Fuel-Handling Incidents / 8									
000037 (APE 37) Steam Generator Tube Leak / 3						.4.8	Generic K/A 2.4.8 – Knowledge of how abnormal operating procedures are used in conjunction with EOPs. (CFR 41.10 / 43.5 / 45.13)	4.5	1 (83)
000051 (APE 51) Loss of Condenser Vacuum / 4									
000059 (APE 59) Accidental Liquid Radwaste Release / 9									
000060 (APE 60) Accidental Gaseous Radwaste Release / 9									
000061 (APE 61) Area Radiation Monitoring System Alarms / 7									
000067 (APE 67) Plant Fire On Site / 8									
000068 (APE 68; ~~BW A06~~) Control Room Evacuation / 8									
000069 (APE 69; W E14) Loss of Containment Integrity / 5									
000074 (EPE 74; W E06 & E07) Inadequate Core Cooling / 4									
000076 (APE 76) High Reactor Coolant Activity / 9									
000078 (APE 78*) RCS Leak / 3									
(W E01 & E02) Rediagnosis & SI Termination / 3									
(W E13) Steam Generator Overpressure / 4									
(W E15) Containment Flooding / 5					.2		EA2.2 – Ability to determine and interpret the following as they apply to the (Containment Flooding): Adherence to appropriate procedures and operations within the limitations in the facility's license and amendments (CFR 43.5 / 45.13)	3.3	1 (84)
(W E16) High Containment Radiation /9									
(BW A01) Plant Runback / 1									
(BW A02 & A03) Loss of NNI-X/Y/7									
(BW A04) Turbine Trip / 4									
(BW A05) Emergency Diesel Actuation / 6									

(BW A07) Flooding / 8									
(BW E03) Inadequate Subcooling Margin / 4									
(~~BW E08~~; W E03) LOCA Cooldown—Depressurization / 4									
(~~BW E09; CE A13**~~; W E09 ~~& E10~~) Natural Circulation/4						.4.46	Generic K/A 2.4.46 – Ability to verify that the alarms are consistent with the plant conditions. (CFR 41.10 / 43.5 / 45.3 / 45.12)	4.2	1 (85)
(BW E13 & E14) EOP Rules and Enclosures									
(~~CE A11**~~; W E08) RCS Overcooling—Pressurized Thermal Shock / 4									
(CE A16) Excess RCS Leakage / 2									
(CE E09) Functional Recovery									
(CE E13*) Loss of Forced Circulation/LOOP/Blackout / 4									
K/A Category Point Totals:					2	2	Group Point Total:		4

ES-401	PWR Examination Outline Plant Systems—Tier 2/Group 1 (SRO)												Form ES-401-2	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	K/A Topic(s)	IR	#
003 (SF4P RCP) Reactor Coolant Pump														
004 (SF1; SF2 CVCS) Chemical and Volume Control														
005 (SF4P RHR) Residual Heat Removal														
006 (SF2; SF3 ECCS) Emergency Core Cooling														
007 (SF5 PRTS) Pressurizer Relief/Quench Tank														
008 (SF8 CCW) Component Cooling Water											.2.40	Generic K/A 2.2.40 – Ability to apply Technical Specifications for a system. (CFR 41.10 / 43.2 / 43.5 / 45.3)	4.7	1 (86)
010 (SF3 PZR PCS) Pressurizer Pressure Control														
012 (SF7 RPS) Reactor Protection														
013 (SF2 ESFAS) Engineered Safety Features Actuation														
022 (SF5 CCS) Containment Cooling								.05				A2.05 – Ability to (a) predict the impacts of the following malfunctions or operations on the CCS, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Major leak in CCS (CFR 41.5 / 43.5 / 45.3, 13)	3.5	1 (87)
025 (SF5 ICE) Ice Condenser														
026 (SF5 CSS) Containment Spray														
039 (SF4S MSS) Main and Reheat Steam														
059 (SF4S MFW) Main Feedwater														
061 (SF4S AFW) Auxiliary/Emergency Feedwater											.2.12	Generic K/A 2.2.12 – Knowledge of surveillance procedures. (CFR 41.10 / 45.13)	4.1	1 (88)
062 (SF6 ED AC) AC Electrical Distribution														
063 (SF6 ED DC) DC Electrical Distribution								.02				A2.02 – Ability to (a) predict the impacts of the following malfunctions or operations on the DC distribution system, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of ventilation during battery charging (CFR 41.5 / 43.5 / 45.3 / 45.13)	3.1	1 (89)
064 (SF6 EDG) Emergency Diesel Generator														
073 (SF7 PRM) Process Radiation Monitoring														
076 (SF4S SW) Service Water														
078 (SF8 IAS) Instrument Air											.1.32	Generic K/A 2.1.32 – Ability to explain and apply system limits and precautions. (CFR: 41.10 / 43.2 / 45.12)	4.0	1 (90)
103 (SF5 CNT) Containment														

053 (SF1; SF4P ICS*) Integrated Control														
K/A Category Point Totals:								2			3	Group Point Total:		5

ES-401	PWR Examination Outline Plant Systems—Tier 2/Group 2 (SRO)											Form ES-401-2		
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	K/A Topic(s)	IR	#
001 (SF1 CRDS) Control Rod Drive														
002 (SF2; SF4P RCS) Reactor Coolant														
011 (SF2 PZR LCS) Pressurizer Level Control														
014 (SF1 RPI) Rod Position Indication														
015 (SF7 NI) Nuclear Instrumentation														
016 (SF7 NNI) Nonnuclear Instrumentation														
017 (SF7 ITM) In-Core Temperature Monitor														
027 (SF5 CIRS) Containment Iodine Removal														
028 (SF5 HRPS) Hydrogen Recombiner and Purge Control														
029 (SF8 CPS) Containment Purge														
033 (SF8 SFPCS) Spent Fuel Pool Cooling								.01				A2.01 – Ability to (a) predict the impacts of the following malfunctions or operations on the Spent Fuel Pool Cooling System, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Inadequate SDM (CFR 41.5 / 43.5 / 45.3 / 45.13)	3.5	1 (91)
034 (SF8 FHS) Fuel-Handling Equipment														
035 (SF 4P SG) Steam Generator														
041 (SF4S SDS) Steam Dump/Turbine Bypass Control											.1.31	Generic K/A 2.1.31 – Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup. (CFR: 41.10 / 45.12)	4.3	1 (92)
045 (SF 4S MTG) Main Turbine Generator														
055 (SF4S CARS) Condenser Air Removal														
056 (SF4S CDS) Condensate														
068 (SF9 LRS) Liquid Radwaste														
071 (SF9 WGS) Waste Gas Disposal														
072 (SF7 ARM) Area Radiation Monitoring														
075 (SF8 CW) Circulating Water														
079 (SF8 SAS**) Station Air														
086 Fire Protection								.03				A2.03 – Ability to (a) predict the impacts of the following malfunctions or operations on the Fire Protection System, and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Inadvertent actuation of the FPS due to circuit failure or welding (CFR 41.5 / 43.5 / 45.3 / 45.13)	2.9	1 (93)

050 (SF 9 CRV*) Control Room Ventilation													
K/A Category Point Totals:							2			1	Group Point Total:		3

Facility: Point Beach Nuclear Plant, Units 1 and 2 Date of Exam: July 26 – August 6, 2021

Category	K/A #	Topic	RO		SRO-Only	
			IR	#	IR	#
1. Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements. (CFR 41.10 / 45.13)	3.8	1 (66)		
	2.1.26	Knowledge of industrial safety procedures (such as rotating equipment, electrical, high temperature, high pressure, caustic, chlorine, oxygen, and hydrogen). (CFR 41.10 / 45.12)	3.4	1 (67)		
	2.1.37	Knowledge of procedures, guidelines, or limitations associated with reactivity management. (CFR 41.1 / 43.6 / 45.6)	4.3	1 (68)		
	2.1.13	Knowledge of facility requirements for controlling vital/controlled access. (CFR 41.10 / 43.5 / 45.9, 10)			3.2	1 (94)
	2.1.42	Knowledge of new and spent fuel movement procedures. (CFR: 41.10 / 43.7 / 45.13)			3.4	1 (95)
	Subtotal			3		2
2. Equipment Control	2.2.13	Knowledge of clearance and tagging procedures. (CFR 41.10 / 45.13)	4.1	1 (69)		
	2.2.14	Knowledge of the process for controlling equipment configuration or status. (CFR 41.10 / 43.3 / 45.13)	3.9	1 (70)		
	2.2.37	Ability to determine operability and/or availability of safety related equipment. (CFR 41.7 / 43.5 / 45.12)	3.6	1 (71)		
	2.2.17	Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with transmission system operator. (CFR 41.10 / 43.5 / 45.13)			3.8	1 (96)
	Subtotal			3		1
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits under normal or emergency conditions. (CFR 41.12 / 43.4 / 45.10)	3.2	1 (72)		
	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. (CFR: 41.12 / 45.9 / 45.10)			3.7	1 (97)
	2.3.15	Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc. (CFR 41.12 / 43.3 / 45.9)			3.1	1 (98)
	Subtotal			1		2

4. Emergency Procedures / Plan	2.4.20	Knowledge of the operational implications of EOP warnings, cautions, and notes. (CFR 41.10 / 43.5 / 45.13)	3.8	1 (73)		
	2.4.26	Knowledge of facility protection requirements, including fire brigade and portable firefighting equipment usage. (CFR 41.10 / 43.5 / 45.12)	3.1	1 (74)		
	2.4.35	Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects. (CFR 41.10 / 43.5 / 45.13)	3.8	1 (75)		
	2.4.22	Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations. (CFR 41.7 / 41.10 / 43.5 / 45.12)			4.4	1 (99)
	2.4.40	Knowledge of SRO responsibilities in emergency plan implementation. (CFR 41.10 / 43.5 / 45.11)			4.5	1 (100)
	Subtotal			3		2
Tier 3 Point Total				10		7