

Facility: Pilgrim		Date of Exam: 05/01/00						Exam Level: SRO					
Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	5	3	2				7	5			4	26
	2	5	2	4				4	1			1	17
	Tier Totals	10	5	6				11	6			5	43
	1	2	1	4	2	2	0	2	4	2	2	2	23
2. Plant Systems	2	1	1	1	2	1	2	3	1	0	0	1	13
	3	0	0	1	0	0	1	0	0	1	1	0	4
	Tier Totals	3	2	6	4	3	3	5	5	3	3	3	40
	3. Generic Knowledge and Abilities				Cat 1	Cat 2	Cat 3	Cat 4					
				5	3	2	7						

- Note:
- Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).
 - Actual point totals must match those specified in the table.
 - Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.
 - Systems/evolutions within each group are identified on the associated outline.
 - The shaded areas are not applicable to the category/tier.
 - * The generic 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.
 - On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

ES-401 BWR SRO Examination Outline Form ES-401-1
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
295003 Partial or Complete Loss of AC Pwr / 6						X	2.3.10, Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	3.3	1
295006 SCRAM / 1					X		A201, Ability to determine and/or interpret the following as they apply to SCRAM: Reactor Power.	4.6	1
295007 High Reactor Pressure / 3		X					**K201, Knowledge of the interrelations between HIGH REACTOR PRESSURE and the following: Reactor/turbine pressure regulating system.	3.7	1
295009 Low Reactor Water Level / 2	X						K102, Knowledge of the operational implications of the following concepts as they apply to LOW REACTOR WATER LEVEL: Recirculation pump net positive suction head: Plant-Specific.	3.1	1
295010 High Drywell Pressure / 5			X	X			K304, Knowledge of the reasons for the following responses as they apply to HIGH DRYWELL PRESSURE: Leak investigation. A102, Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE: Drywell floor and equipment drain sumps.	3.8 3.6	1 1
295013 High Suppression Pool Temp. / 5				X			A101, Ability to operate and/or monitor the following as they apply to HIGH SUPPRESSION POOL TEMPERATURE: Suppression pool cooling.	3.9	1
295014 Inadvertent Reactivity Addition / 1		X			X		K206, Knowledge of the interrelations between INADVERTENT REACTIVITY ADDITION and the following: Moderator temperature. **A203, Ability to determine and/or interpret the following as they apply to INADVERTENT REACTIVITY ADDITION: Cause of reactivity addition.	3.5 4.3	1 1
295015 Incomplete SCRAM / 1					X		A201, Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM: Reactor power.	4.3	1
295016 Control Room Abandonment / 7				X		X	A105, Ability to operate and/or monitor the following as they apply to CONTROL ROOM ABANDONMENT: D.C. electrical distribution. 2.3.5, Knowledge of use and function of personnel monitoring equipment.	2.9 2.5	1 1
295017 High Off-site Release Rate / 9		X		X			K209, Knowledge of the interrelations between HIGH OFF-SITE RELEASE RATE and the following: Condenser air removal system: Plant specific. **A109, Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Standby gas treatment/FRVS.	2.9 3.8	1 1
295023 Refueling Accidents	X		X				K102, Knowledge of the operational implications of the following concepts as they apply to REFUELING ACCIDENTS: Shutdown margin. K304, Knowledge of the reasons for the following responses as they apply to REFUELING ACCIDENTS: Non-coincident SCRAM function.	3.6 3.5	1 1
295024 High Drywell Pressure / 5	X						K101, Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE: Drywell integrity: Plant specific.	4.2	1
295025 High Reactor Pressure / 3	X						K104, Knowledge of the operational implications of the following concepts as they apply to HIGH REACTOR PRESSURE: Decay heat generation.	3.9	1

** K/A was selected based on Plant-Specific Priorities. See page 12 for details.

ES-401 BWR SRO Examination Outline Form ES-401-1 Emergency and Abnormal Plant Evolutions - Tier 1/Group 1									
E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
295026 Suppression Pool High Water Temp. / 5					X		A201, Ability to determine and/or interpret the following as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE: Suppression pool water temperature.	4.2	1
295027 High Containment Temperature / 5							N/A for PNPS.		
295030 Low Suppression Pool Water Level / 5						X	**2.4.6, Knowledge of symptom based EOP mitigation strategies.	4.0	1
295031 Reactor Low Water Level / 2					X		A202, Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL: Reactor power.	4.2	1
295037 SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown / 1				X		X	A105, Ability to operate and/or monitor the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: CRD hydraulics system.	4.0	1
							**2.4.6, Knowledge of symptom based EOP mitigation strategies.	4.0	1
295038 High Off-Site Release Rate / 9				X			**A106, Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Plant ventilation.	3.6	1
500000 High Containment Hydrogen Conc. / 5	X			X			K101, Knowledge of the operational implications of the following concepts as they apply to HIGH CONTAINMENT HYDROGEN CONCENTRATIONS: Containment integrity.	3.9	1
							A106, Ability to operate and monitor the following as they apply to HIGH CONTAINMENT HYDROGEN CONTROL: Drywell sprays.	3.4	1
K/A Category Totals:	5	3	2	7	5	4	Group Point Total:		26

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Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4				X			A107, Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Nuclear Boiler Instrumentation System	3.2	1
295002 Loss of Main Condenser Vacuum / 3	X						K103, Knowledge of the operational implications of the following concepts as they apply to LOSS OF MAIN CONDENSER VACUUM: Loss of heat sink.	3.8	1
295004 Partial or Total Loss of DC Pwr / 6			X				K302, Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: Ground isolation/fault determination	3.3	1
295005 Main Turbine Generator Trip / 3				X			A104, Ability to operate and/or monitor the following as they apply to MAIN TURBINE GENERATOR TRIP: Main generator controls	2.8	1
295008 High Reactor Water Level / 2		X					K202, Knowledge of the interrelations between HIGH REACTOR WATER LEVEL and the following: Reactor feedwater system	3.8	1
295011 High Containment Temperature / 5							N/A for PNPS.		
295012 High Drywell Temperature / 5							Not randomly selected.		
295018 Partial or Total Loss of CCW / 8							Not randomly selected.		
295019 Partial or Total Loss of Inst. Air / 8				X			A101, Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Backup air supply	3.3	1
295020 Inadvertent Cont. Isolation / 5 & 7			X				K303, Knowledge of the reasons for the following responses as they apply to INADVERTENT CONTAINMENT ISOLATION: Drywell/containment temperature response	3.2	1
295021 Loss of Shutdown Cooling / 4	X						K104, Knowledge of the operational implications of the following concepts as they apply to LOSS OF SHUTDOWN COOLING: Natural circulation	3.7	1
295022 Loss of CRD Pumps / 1			X				K301, Knowledge of the reasons for the following responses as they apply to LOSS OF CRD PUMPS: Reactor SCRAM	3.9	1
295028 High Drywell Temperature / 5	X						K102, Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL TEMPERATURE: Equipment environmental qualification	3.1	1
295029 High Suppression Pool Water Level / 5						X	2.1.14, Knowledge of system status criteria which require the notification of plant personnel.	3.3	1
295032 High Secondary Containment Area Temperature / 5				X			A105, Ability to operate and/or monitor the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE: Affected systems so as to isolate damaged portions	3.9	1
295033 High Secondary Containment Area Radiation Levels / 9	X						K102, Knowledge of the operational implications of the following concepts as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS: Personnel protection	4.2	1
295034 Secondary Containment Ventilation High Radiation / 9	X						K102, Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT VENTILATION HIGH RADIATION: Radiation releases.	4.4	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)	Imp.	Points
295035 Secondary Containment High Differential Pressure / 5		X					K204, Knowledge of the interrelations between SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE and the following: Blow-out panels: Plant Specific	3.7	1
295036 Secondary Containment High Sump/Area Water Level / 5			X				K301, Knowledge of the reasons for the following responses as they apply to SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL: Emergency depressurization.	2.8	1
600000 Plant Fire On Site / 8					X		A209, Ability to determine and interpret the following as they apply to PLANT FIRE ON SITE: That a failed fire alarm detector exists	2.8	1
K/A Category Point Totals:	5	2	4	4	1	1	Group Point Total:		17

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Plant Systems - Tier 2/Group 1

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)	Imp.	Points
201005 RCIS												N/A for PNPS.		
202002 Recirculation Flow Control									X			A303, Ability to monitor automatic operations of the RECIRCULATION FLOW CONTROL SYSTEM including: Scoop tube operation: BWR-2, 3, 4.	3.0	1
203000 RHR/LPCI: Injection Mode			X									K302, Knowledge of the effect that a loss or malfunction of the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) will have on the following: Suppression pool level.	3.5	1
206000 HPCI								X				A202, Ability to (a) predict the impacts of the following on the HIGH PRESSURE COOLANT INJECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Valve closures: BWR-2, 3, 4.	3.5	1
207000 Isolation (Emergency) Condenser												N/A for PNPS.		
209001 LPCS			X									K302, Knowledge of the effect that a loss or malfunction of the LOW PRESSURE CORE SPRAY SYSTEM will have on the following: ADS logic.	3.9	1
209002 HPCS												N/A for PNPS.		
211000 SLC					X							K504, Knowledge of the operational implications of the following concepts as they apply to STANDBY LIQUID CONTROL SYSTEM: Explosive valve operation.	3.2	1
212000 RPS		X										K201, Knowledge of electrical power supplies to the following: RPS motor-generator sets.	3.3	1
215004 Source Range Monitor								X				A206, Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failed recorder.	2.5	1
215005 APRM / LPRM							X				X	2.1.8, Ability to coordinate personnel activities outside the control room. A105, Ability to predict and/or monitor changes in parameters associated with operating the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM controls including: Lights and alarms.	3.6 3.2	1 1

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Plant Systems - Tier 2/Group 1

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)	Imp.	Points
216000 Nuclear Boiler Instrumentation								X				A204, Ability to (a) predict the impacts of the following on the NUCLEAR BOILER INSTRUMENTATION; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Detector diaphragm failure or leakage.	3.0	1
217000 RCIC					X							K507, Knowledge of the operational implications of the following concepts as they apply to REACTOR CORE ISOLATION COOLING SYSTEM (RCIC): Assist core cooling.	3.1	1
218000 ADS										X		A407, Ability to manually operate and/or monitor in the control room: ADS valve acoustical monitor noise: Plant-Specific	3.8	1
223001 Primary CTMT and Auxiliaries								X	X			A302, Ability to monitor automatic operations of the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES including: Vacuum breaker/relief valve operation. **A207, Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High drywell pressure.	3.4 4.3	1 1
223002 PCIS/Nuclear Steam Supply Shutoff				X								K408, Knowledge of PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF design feature(s) and/or interlocks which provide for the following: Manual defeating of selected isolations during specified emergency conditions.	3.7	1
226001 RHR/LPCI: CTMT Spray Mode				X								K405, Knowledge of RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE design feature(s) and/or interlocks which provide for the following: Pump minimum flow protection.	2.5	1
239002 SRVs											X	**2.1.9, Ability to direct personnel activities inside the control room.	4.0	1
241000 Reactor/Turbine Pressure Regulator										X		A402, Ability to manually operate and/or monitor in the control room: Reactor pressure.	4.1	1

** K/A was selected based on Plant-Specific Priorities. See page 12 for details.

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Plant Systems - Tier 2/Group 1

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)	Imp.	Points
259002 Reactor Water Level Control			X									K304, Knowledge of the effect that a loss or malfunction of the REACTOR WATER LEVEL CONTROL SYSTEM will have on the following: Recirculation system: Plant-Specific.	3.0	1
261000 SGTS	X											K108, Knowledge of the physical connections and/or cause-effect relationships between STANDBY GAS TREATMENT SYSTEM and the following: Process radiation monitoring system.	3.1	1
262001 AC Electrical Distribution							X					A104, Ability to predict and/or monitor changes in parameters associated with operating the A.C. ELECTRICAL DISTRIBUTION controls including: Load currents.	2.9	1
264000 EDGs	X											K104, Knowledge of the physical connections and/or cause-effect relationships between EMERGENCY GENERATORS (DIESEL/JET) and the following: Emergency generator cooling water system.	3.3	1
290001 Secondary CTMT			X									K301, Knowledge of the effect that a loss or malfunction of the SECONDARY CONTAINMENT will have on the following: Off-site radioactive release rates.	4.4	1
K/A Category Point Totals:	2	1	4	2	2	0	2	4	2	2	2	Group Point Total:		23

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ES-401 BWR SRO Examination Outline Form ES-401-1
Plant Systems - Tier 2/Group 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)	Imp.	Points
201001 CRD Hydraulic												Not randomly selected.		
201002 RMCS							X					A103, Ability to predict and/or monitor changes in parameters associated with operating the REACTOR MANUAL CONTROL SYSTEM controls including: Rod movement sequence lights.	2.9	1
201004 RSCS												N/A for PNPS.		
201006 RWM						X						K603, Knowledge of the effect that a loss or malfunction of the following will have on the ROD WORTH MINIMIZER SYSTEM (RWM) (PLANT-SPECIFIC): Rod position indication: P-Spec (Not-BWR6).	2.9	1
202001 Recirculation						X						K601, Knowledge of the effect that a loss or malfunction of the following will have on the RECIRCULATION SYSTEM: Jet pumps: Plant-specific.	3.7	1
204000 RWCU												Not randomly selected.		
205000 Shutdown Cooling			X									K304, Knowledge of the effect that a loss or malfunction of the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) will have on the following: Recirculation loop temperatures.	3.7	1
214000 RPIS					X							K501, Knowledge of the operational implications of the following concepts as they apply to ROD POSITION INFORMATION SYSTEM: Reed switches.	2.8	1
215002 RBM												Not randomly selected.		
215003 IRM												Not randomly selected.		
219000 RHR/LPCI: Torus/Pool Cooling Mode		X										K203, Knowledge of electrical power supplies to the following: Valve control logic: Plant-Specific.	2.6	1
230000 RHR/LPCI: Torus/Pool Spray Mode											X	2.4.19, Knowledge of EOP layout/symbols/and icons.	3.7	1
234000 Fuel Handling Equipment												Not randomly selected.		
239003 MSIV Leakage Control												N/A for PNPS.		
245000 Main Turbine Gen. and Auxiliaries							X					A105, Ability to predict and/or monitor changes in parameters associated with operating the MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS controls including: Reactor pressure.	3.4	1
259001 Reactor Feedwater				X								K402, Knowledge of REACTOR FEEDWATER SYSTEM design feature(s) and/or interlocks which provide for the following: Feedwater heating.	2.9	1

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Plant Systems - Tier 2/Group 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)	Imp.	Points
262002 UPS (AC/DC)												N/A for PNPS.		
263000 DC Electrical Distribution				X								K401, Knowledge of D.C. ELECTRICAL DISTRIBUTION design feature(s) and/or interlocks which provide for the following: Manual/automatic transfers of control: Plant-Specific.	3.4	1
271000 Offgas								X				A202, Ability to (a) predict the impacts of the following on the OFFGAS SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low dilution steam flow.	3.1	1
272000 Radiation Monitoring												Not randomly selected.		
286000 Fire Protection												Not randomly selected.		
290003 Control Room HVAC							X					A104, Ability to predict and/or monitor changes in parameters associated with operating the CONTROL ROOM HVAC controls including: Control room pressure.	2.8	1
300000 Instrument Air	X											K104, Knowledge of the connections and/or cause effect relationships between INSTRUMENT AIR SYSTEM and the following: Cooling water to compressor.	2.9	1
400000 Component Cooling Water												Not randomly selected.		
K/A Category Point Totals:	1	1	1	2	1	2	3	1	0	0	1	Group Point Total:		13

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ES-401 BWR SRO Examination Outline Form ES-401-1
Plant Systems - Tier 2/Group 3

System # / Name	K 1	K 2	K 3	K 4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201003 Control Rod and Drive Mechanism												Not randomly selected.		
215001 Traversing In-core Probe												Not randomly selected.		
233000 Fuel Pool Cooling and Cleanup												Not randomly selected.		
239001 Main and Reheat Steam										X		**A409, Ability to manually operate and/or monitor in the control room: Reactor pressure.	3.9	1
256000 Reactor Condensate									X			A304, Ability to monitor automatic operations of the REACTOR CONDENSATE SYSTEM including: System flow.	3.0	1
268000 Radwaste						X						K602, Knowledge of the effect that a loss or malfunction of the following will have on the RADWASTE: Plant air systems	2.6	1
288000 Plant Ventilation			X									K304, Knowledge of the effect that a loss or malfunction of the PLANT VENTILATION SYSTEMS will have on the following: Secondary containment pressure: Plant-Specific	3.3	1
290002 Reactor Vessel Internals												Not randomly selected.		
K/A Category Point Totals:	0	0	1	0	0	1	0	0	1	1	0	Group Point Total:		4

** K/A was selected based on Plant-Specific Priorities. See page 12 for details.

Plant-Specific Priorities			
System / Topic	Recommended Replacement for...	Reason	Points
295007 – K201, Knowledge of the interrelations between HIGH REACTOR PRESSURE and the following: Reactor/turbine pressure regulating system.	295007 - 2.3.9, Knowledge of the process for performing a containment purge.	Containment purge does not relate to high reactor pressure. Replace with a question from Risk Significant Human Error Probabilities.	1
295014 – A203, Ability to determine and/or interpret the following as they apply to INADVERTENT REACTIVITY ADDITION: Cause of reactivity addition.	295014 – 2.1.15, Ability to manage short-term information such as night and standing orders.	Ability to manage short-term information does not relate well to inadvertent reactivity addition. Loss of feedwater heating has occurred since the last outage. Cover this topic with a question in this area.	1
295017 – A109, Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Standby gas treatment/FRVS.	295017 - A202, Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Total number of curies released: Plant specific.	Calculating total curies is beyond on-shift SRO responsibilities. Take question from IPE Human Performance Perspectives.	1
295030 – 2.4.6, Knowledge of symptom based EOP mitigation strategies.	295030 - 2.3.7, Knowledge of the process for preparing a radiation work permit.	Preparing an RWP does not relate closely with low suppression pool water level. Replace with a question concerning mitigation of low torus water level that may be implemented during a seismic event as described in the FSAR.	1
295037 – 2.4.6, Knowledge of symptom based EOP mitigation strategies.	295037 - 2.4.33, Knowledge of the process used to track inoperable alarms.	Process used to track inoperable alarms not applicable to ATWS. Replace with 2.4.6 which can be related to Risk Significant Human Error Probabilities.	1
295038 – A106, Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE: Plant ventilation.	295038 - 2.4.25, Knowledge of fire protection procedures.	Fire Protection procedures do not relate to high off-site release rate. Replace with a question related to Risk Significant Human Error Probabilities.	1
223001 – A207, Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High drywell pressure.	223001 - K304, Knowledge of the effect that a loss or malfunction of the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES will have on the following: Containment/drywell hydrogen gas concentration.	Since Pilgrim does not have hydrogen recombiners or ignitors, this KA may not be meaningful. Replace with a question related to Risk Significant Human Error Probabilities.	1
239002 – 2.1.9, Ability to direct personnel activities inside the control room.	239002 - 2.3.6, Knowledge of the requirements for reviewing and approving release permits.	Release permits not related to SRV's. Replace with a question related to Risk Significant Human Error Probabilities.	1
239001 – A409, Ability to manually operate and/or monitor in the control room: Reactor pressure.	290002 - K307, Knowledge of the effect that a loss or malfunction of the REACTOR VESSEL INTERNALS will have on the following: Nuclear boiler instrumentation.	Loss or malfunction of reactor vessel internals may not result in specific changes to nuclear boiler instrumentation. Replace with question related to Risk Significant Human Error Probabilities.	1
2.1.32, Ability to explain and apply system limits and precautions.	2.3.6, Knowledge of the requirements for reviewing and approving release permits.	Minimal involvement by SRO's in reviewing/approving release permits. Replace with a question covering specific recent LER.	1
Plant-Specific Priority Total (limit 10):			10

Facility: Pilgrim		Date of Exam: 05/01/00		Exam Level: SRO	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements.	3.8	1	
	2.1.3	Knowledge of shift turnover practices.	3.4	1	
	2.1.13	Knowledge of facility requirements for controlling vital/controlled access.	2.9	1	
	2.1.24	Ability to obtain and interpret station electrical and mechanical drawings.	3.1	1	
	**2.1.32	Ability to explain and apply system limits and precautions.	3.8	1	
	Total				5
Equipment Control	2.2.6	Knowledge of the process for making changes in procedures as described in the safety analysis report.	3.3	1	
	2.2.7	Knowledge of the process for conducting tests or experiments not described in the safety analysis report.	3.2	1	
	2.2.30	Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area/communication with fuel storage facility/systems operated from the control room in support of fueling operations/and supporting instrumentation.	3.3	1	
	Total				3
Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control/including permissible levels in excess of those authorized.	3.1	1	
	2.3.8	Knowledge of the process for performing a planned gaseous radioactive release.	3.2	1	
	Total				2
Emergency Procedures/ Plan	2.4.11	Knowledge of abnormal condition procedures.	3.6	1	
	2.4.16	Knowledge of EOP implementation hierarchy and coordination with other support procedures.	4.0	1	
	2.4.17	Knowledge of EOP terms and definitions.	3.8	1	
	2.4.28	Knowledge of procedures relating to emergency response to sabotage.	3.3	1	
	2.4.32	Knowledge of operator response to loss of all annunciators.	3.5	1	
	2.4.38	Ability to take actions called for in the facility emergency plan/including (if required) supporting or acting as emergency coordinator.	4.0	1	
	2.4.44	Knowledge of emergency plan protective action recommendations.	4.0	1	
	Total				7
Tier 3 Point Total				17	

** K/A was selected based on Plant-Specific Priorities. See page 12 for details.

Facility: Pilgrim
 Examination Level: SRO(U)

Date of Examination: 05/01/00
 Operating Test Number: 1

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Temp. Modification of Procedures	JPM – Prepare non-intent procedure change.
	Mode Change	JPM – Process documentation for mode switch to run/enter active LCO for APRM functional.
A.2	Tagging	JPM - Prepare tagout for MO-2301-15 valve HPCI full flow test #2.
A.3	Procedures to Reduce Excessive Levels of Radiation	JPM – Perform required notifications for loss of radioactive material.
A.4	Emergency Classification	JPM – Classify SAE due to ATWS.

Facility: <u>Pilgrim</u>		Date of Examination: <u>05/01/00</u>
Examination Level: <u>SRO(U)</u>		Operating Test Number: <u>1</u>
B.1 Control Room Systems		
System / JPM Title	Type Code*	Safety Function
a. EDG / Monthly Load Test/Start and Load EDG – KW Oscillations.	M, A, S	6
b. RWCU/Establish RWCU reject to main condenser during plant startup.	N, S, L	2
c. Rx/Turbine press regulating/transfer to MPR at power/pressure oscillations.	D, A, S	3
B.2 Facility Walk-Through		
a. RHR/LPCI/Injection Mode/X-tie Fire Water to RHR.	M, R	4
b. RPS/Transfer 'B' RPS to backup – secure 'B' RPS MG Set.	M	7
* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA		

Scenario Outline

Facility: Pilgrim Scenario No.: 1 Op-Test No.: 1

Examiners: _____ Operators: _____

Objectives: To evaluate the applicants' ability to lower reactor power; respond to a failure of the selected FWLC Instrument, an isolable leak on the Core Spray System, a small break LOCA, and a loss of feedwater which leads to alternate depressurization.

Initial Conditions: 100% power, HPCI OOS. 'A' TBCCW pump is in service.

Turnover: The plant is operating at 100% power, HPCI is out of service for aux oil pump replacement. Currently in Day 2 of 14 day LCO. All required surveillances complete. 'B' TBCCW pump is out of service for maintenance, expected to return to service tomorrow. The Feedwater Flow Correction Factor is NOT applied.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N	Lower Rx power in response to report of 'B' RFP overheating. (To be verbally reported shortly after shift turnover.)
2	FW-24	I	Downscale failure of selected FWLC level instrument. (Inserted when directed by Chief Examiner.)
3	N/A Verbal Report	C	Leak on 'B' core spray suction (isolable). (Reported when directed by Chief Examiner.)
4	PC-01	M	Small Break LOCA. (Inserted when directed by Chief Examiner.)
5	ED-08	C	Lockout of bus A-1 (Loss of Feedwater) leading to Alternate Depressurization. (Pre-inserted to occur upon A-1 transfer.)
6	RC-02	C	RCIC Turbine Trip. (Pre-inserted to occur when RCIC flow reaches 400 GPM.)

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

Scenario Outline

Facility: Pilgrim Scenario No.: 2 Op-Test No.: 2

Examiners: _____ Operators: _____

Objectives: To evaluate the applicants' ability to place the third RFP in service, respond to squib valve failure, APRM upscale failure, and loss of vacuum resulting in an incomplete scram with SBLC failure.

Initial Conditions: 58% power, no equipment out of service.

Turnover: The plant is starting up from a one week outage for equipment repairs. The Feedwater Flow Correction Factor is not applied. Directions for the shift are to place the third RFP in service and continue with the power ascension. PNPS 2.2.96 has been completed through Step 7.3.1[7] for starting the 'A' RFP.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N	Place third RFP in service. (Direction given in shift turnover.)
2	I/O	C	Failure of 'A' squib valve. (Inserted upon direction of Chief Examiner.)
3	NM-20	I	APRM 'B' upscale failure. (Inserted upon direction of Chief Examiner.)
4		M	Loss of vacuum – ATWS. (Loss of vacuum inserted upon direction of Chief Examiner. ATWS is pre-inserted.)
5	TC-14	C	Main Turbine bypass valves fail to open. (Pre-inserted)
6	LP-01/ LP-02	C	Trip of 'B' SBLC pump/discharge line of 'A' SBLC clogged. (Pre-inserted)

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

Scenario Outline

Facility: Pilgrim Scenario No.: 3 Op-Test No.: 3

Examiners: _____ Operators: _____

Objectives: To evaluate the applicants' ability to place the standby RBCCW pump in service, respond to a trip of an RPS MG set resulting in a single rod scram, loss of RBCCW leading to high drywell temperature and alternate depressurization with a failure of one SRV to open.

Initial Conditions: 100% power, no equipment out of service.

Turnover: The plant is operating at 100% power. The Feedwater Flow Correction Factor is not applied. It was reported last shift that SBLC tank concentration was 8.3% boron by weight. L.C.O. 3.4.A has been entered. Chemistry is making calculations for an addition. Directions for the shift are to support Chemistry and to remove 'D' RBCCW pump from service to allow repair of seal leak.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N	Place standby RBCCW pump in service, remove 'D' RBCCW pump from service. (Instruction given as part of turnover.)
2	RP-09/ RD-11A	I	Trip of 'B' RPS MG Set/one rod scrams (Rod 42-07). (Failure of RPS solenoid pre-inserted. MG set trip inserted as directed by Chief Examiner.)
3	CW-06	C	Unisolable gross seal failure of RBCCW pump causes loss of 'B' loop RBCCW. (Inserted as directed by Chief Examiner.)
4	TC-14	C	Main Turbine Bypass Valves fail closed. (Pre-inserted)
5	N/A	M	Alternate Depressurization on high DW temp.
6	MS-15	C	'B' SRV fails to open. (Inserted upon initiation of Alternate Depressurization.)

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

Scenario Outline

Facility: Pilgrim Scenario No.: 4 Op-Test No.: 4

Examiners: _____ Operators: _____

Objectives: To evaluate the applicants' ability to transfer CRD FCV's, respond to a reactor recirc pump runaway, a steam leak on RCIC with isolation failure which will result in alternate depressurization, and a failure of bus A-5 transfer.

Initial Conditions: 100% power, EOL IC, no equipment out of service, 'A' CRD FCV in service.

Turnover: The plant is operating at 100% power. The Feedwater Flow Correction Factor is not applied. Directions for the shift are to transfer to 'B' CRD FCV to allow maintenance on the 'A' CRD FCV.

Event No.	Malf. No.	Event Type*	Event Description
1	N/A	N	Transfer CRD FCV. (Instruction given as part of turnover.)
2	H1S1	I	'A' recirc pump runaway. (Inserted at direction of Chief Examiner.)
3	RC-06	M	Steam leak in RCIC quad/drive to Alternate Depressurization. (Inserted at direction of Chief Examiner.)
4	CO-R5	C	Auto/Manual isolation of RCIC fails. (Pre-inserted)
5	RPWA 7-8 RPWB 7-8	C	RBIS Failure. (Pre-inserted)

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

Scenario Outline

Facility: Pilgrim Scenario No.: 5 Op-Test No.: Spare

Examiners: _____ Operators: _____

Objectives: To evaluate the applicants' ability to respond to a loss of the startup transformer, a leak in the drywell, with a failure of high pressure injection.

Initial Conditions: 100% power, shutdown transformer out of service.

Turnover: The plant is operating at 100% power. The Feedwater Flow Correction Factor is not applied. The plant is currently in day 4 of 7 of Tech.Spec. 3.9.B.1.b. Directions for shift are to continue to operate at 100% power.

Event No.	Malf. No.	Event Type*	Event Description
1	ED-04	C	Loss of Startup Transformer. (Inserted on direction of Chief Examiner.)
2	N/A	N	Power reduction to 25% per T.S. 3.9.B.2. (Completed as a result of Event 1.)
3	PC-01	M	Leak in drywell/reactor scram. (Inserted on direction of Chief Examiner.)
4	HP-04/ HP-06	I	HPCI flow controller failure. (Pre-inserted to have flow controller fail upon reaching 4250 GPM HPCI flow. Inverter failure inserted upon direction of Chief Examiner.)
5	RC-02	C	RCIC Inop – Trip Throttle Valve Trip. (Pre-inserted to trip when RCIC flow reaches 400 GPM.)

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