

Facility: Pilgrim		Date of Exam: 2/2007																	
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 & Abnormal Plant Evolution	1	4	3	4	N/A			5	2	N/A			1	19	3	5	8		
	2	1	2	2				1	1				1	8	2	2	4		
	Tier Totals	5	5	6				6	3				2	27	5	7	12		
2. Plant Systems	1	5	4	2	3	3	1	0	4	1	2	1	26	2	2	4			
	2	1	0	0	1	1	2	2	0	2	2	1	12	0	0	2			
	Tier Totals	5	4	2	4	4	3	2	4	3	4	2	38	2	4	6			
3. Generic Knowledge and Abilities Categories					1		2		3		4		10		1	2	3	4	7
					4		2		2		2				1	2	2	2	
Note:	1.	Ensure that at least two topics from every K/A category are sampled within each tier of the RO outline (i.e., the "Tier Totals" in each K/A category shall not be less than two). Refer to Section D.1.c for additional guidance regarding SRO sampling.																	
** See ES-401-4	2.	The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.																	
	3.	Select topics from many systems and evolutions; avoid selecting more than two K/A topics from a given system or evolution unless they relate to plant-specific priorities.																	
	4.	Systems/evolutions within each group are identified on the associated outline.																	
	5.	The shaded areas are not applicable to the category/tier.																	
	6.*	The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system. The SRO K/As must also be linked to 10 CFR 55.43 or an SRO-level learning objective.																	
	7.	On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IR) for the applicable license level, and the point totals for each system and category. Enter the group and tier totals for each category in the table above; summarize all the SRO-only knowledge and non-A2 ability categories in the columns labeled "K" and "A". Use duplicate pages for RO and SRO-only exams.																	
	8.	For Tier 3, enter the K/A numbers, descriptions, importance ratings, and point totals on Form ES-401-3.																	
	9.	Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.																	

2007 NRC Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4	X						2.1.20	Conduct of Operations: Ability to execute procedure steps	4.2	76
295003 Partial or Complete Loss of AC / 6	X						2.1.12	Conduct of Operations: Ability to apply technical specifications for a system	4.0	77
295006 SCRAM / 1	X						2.1.23	Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.	4.0	78
295021 Loss of Shutdown Cooling / 4	X						2.4.4	Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	79
295024 High Drywell Pressure / 5						X	EA2.01	Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Drywell pressure	4.4	80
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1						X	EA2.07	Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Power Above APRM Downscale or Unknown: Containment conditions/isolations	4.2	81
295028 High Drywell Temperature / 5	X						2.1.20	Conduct of Operations: Ability to execute procedure steps.	4.2	82
295030 Low Suppression Pool Water Level / 5						X	EA2.03	Ability to determine and/or interpret the following as they apply to LOW SUPPRESSION POOL WATER LEVEL : Reactor pressure	3.9	83
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4						X	AA2.05	Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION : Jet pump operability: Not-BWR-1&2	3.1	39
295003 Partial or Complete Loss of AC / 6					X		AA1.03	Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : Systems necessary to assure safe plant shutdown	4.4	40
295004 Partial or Total Loss of DC Pwr / 6			X				AK2.03	Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the following: D.C. bus loads	3.3	41
295005 Main Turbine Generator Trip / 3		X					AK1.03	Knowledge of the operational implications of the following concepts as they apply to MAIN TURBINE GENERATOR TRIP : Pressure effects on reactor level	3.5	42

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2007 NRC Written Examination Outline
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E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
295006 SCRAM / 1			X				AK2.05	Knowledge of the interrelations between SCRAM and the following: CRD mechanism	3.1	43
295016 Control Room Abandonment / 7				X			AK3.03	Knowledge of the reasons for the following responses as they apply to CONTROL ROOM ABANDONMENT : Disabling control room controls	3.5	44
295018 Partial or Total Loss of CCW / 8				X			AK3.05	Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER : Placing standby heat exchanger in service	3.2	45
295019 Partial or Total Loss of Inst. Air / 8				X			AK3.02	Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR : Standby air compressor operation	3.5	46
295021 Loss of Shutdown Cooling / 4		X					AK1.03	Knowledge of the operational implications of the following concepts as they apply to LOSS OF SHUTDOWN COOLING : Adequate core cooling	3.9	48
295032 HI Secondary Containment Area Temps / 8			X				EK2.01	Knowledge of the interrelations between HI SECONDARY CONTAINMENT AREA TEMP and the following: Area/room coolers	3.4	49
295024 High Drywell Pressure / 5					X		EA1.12	Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE: Suppression pool spray: Mark-I&II	3.8	50
295025 High Reactor Pressure / 3		X					EK1.01	Knowledge of the operational implications of the following concepts as they apply to HIGH REACTOR PRESSURE : Pressure effects on reactor power	3.9	51
295026 Suppression Pool High Water Temp. / 5					X		EA1.01	Ability to operate and/or monitor the following as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE: Suppression Pool cooling	4.1	52
295028 High Drywell Temperature / 5						X	EA2.03	Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE : Reactor water level	3.7	53
295030 Low Suppression Pool Water Level / 5				X			EK3.01	Knowledge of the reasons for the following responses as they apply to LOW SUPPRESSION POOL WATER LEVEL: Emergency depressurization	3.8	54
295031 Reactor Low Water Level / 2		X					EK1.01	Knowledge of the operational implications of the following concepts as they apply to REACTOR LOW WATER LEVEL: Adequate core Cooling	4.6	55

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2007 NRC Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 1

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1	X						2.4.6	Emergency Procedures / Plan Knowledge symptom based EOP mitigation strategies.	3.1	56
295038 High Off-site Release Rate / 9					X		EA1.01	Ability to operate and/or monitor the following as they apply to high off-site release rate: Stack gas monitoring system.	3.9	57
600000 Plant Fire On-site / 8					X		AA1.06	Ability to operate and / or monitor the following as they apply to PLANT FIRE ON SITE: Fire alarm	3.0	58
K/A Category Point Totals:	2/5	4	3	4	5	2/3	Group Point Total:			19/8

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2007 NRC Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 2

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
295010 High Drywell Pressure / 5	X						2.4.30	Emergency Procedures / Plan Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	84
295012 High Drywell Temperature / 5						X	AA2.01	Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE : Drywell temperature	3.9	85
295029 High Suppression Pool Water Level / 5	X						2.2.25	Equipment Control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	86
500000 High CTMT Hydrogen Conc. / 5						X	EA2.03	Ability to determine and / or interpret the following as they apply to HIGH PRIMARY CONTAINMENT HYDROGEN CONCENTRATIONS: Combustible limits for drywell	3.8	87
295007 High Reactor Pressure / 3	X						2.4.49	Emergency Procedures/Plan: Ability to perform without reference to procedures those actions that require immediate operation of system components and controls	4.0	47
295009 Low Reactor Water Level / 2			X				AK2.03	Knowledge of the interrelations between LOW REACTOR WATER LEVEL and the following: Recirculation system	3.1	59
295013 High Suppression Pool Temperature / 5					X		AA1.01	Ability to operate and/or monitor the following as they apply to HIGH SUPPRESSION POOL TEMPERATURE : Suppression pool cooling	3.9	60
295014 Inadvertent Reactivity Addition / 1			X				AK2.01	Knowledge of the interrelations between INADVERTENT REACTIVITY ADDITION and the following: RPS	3.9	61
295015 Incomplete SCRAM / 1						X	AA2.02	Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM : Control rod position	4.1	62
295020 Inadvertent Cont. Isolation / 5 & 7				X			AK3.03	Knowledge of the reasons for the following responses as they apply to INADVERTENT CONTAINMENT ISOLATION: Drywell/containment temperature response	3.2	63
295022 Loss of CRD Pumps / 1				X			AK3.01	Knowledge of the reasons for the following responses as they apply to LOSS OF CRD PUMPS: Reactor SCRAM	3.7	64
295029 High Suppression Pool Water Level / 5		X					EK1.01	Knowledge of the operational implications of the following concepts as they apply to HIGH SUPPRESSION POOL WATER LEVEL : Containment integrity	3.4	65

2007 NRC Written Examination Outline
Emergency and Abnormal Plant Evolutions – Tier 1 Group 2

E/APE # / Name Safety Function	G	K1	K2	K3	A1	A2	Number	K/A Topic(s)	Imp.	Q#
K/A Category Point Total:	1/2	1	2	2	1	1/2	Group Point Total:			8/4

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2007 NRC Written Examination Outline
Plant Systems – Tier 2 Group 1

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
215003 IRM									X			A2.06	Ability to (a) predict the impacts of the following on the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Faulty range switch	3.2	88
215004 Source Range Monitor	X											2.2.25	Equipment Control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.	3.7	89
261000 SGTS									X			A2.03	Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High train temperature	3.2	90
262001 AC Electrical Distribution	X											2.1.12	Conduct of Operations: Ability to apply technical specifications for a system.	4.0	91
203000 RHR/LPCI: Injection Mode			X									K2.03	Knowledge of electrical power supplies to the following: Initiation logic	2.7	1
205000 Shutdown Cooling				X								K3.03	Knowledge of the effect that a loss or malfunction of the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) will have on following: Reactor temperatures (moderator, vessel, flange)	3.8	2
206000 HPCI											X	A4.01	Ability to manually operate and/or monitor in the control room: Turbine speed controls	3.8	3
206000 HPCI			X									K2.01	Knowledge of electrical power supplies to the following: System valves: BWR-2,3,4	3.2	4
209001 LPCS		X										K1.08	Knowledge of the physical connections and/or cause- effect relationships between LOW PRESSURE CORE SPRAY SYSTEM and the following: A.C. electrical power	3.2	5
211000 SLC		X										K1.05	Knowledge of the physical connections and/or cause- effect relationships between STANDBY LIQUID CONTROL SYSTEM and the following: RWCU	3.4	6
211000 SLC											X	A4.01	Ability to manually operate and/or monitor in the control room: Tank level	3.9	7

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2007 NRC Written Examination Outline
Plant Systems – Tier 2 Group 1

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
212000 RPS					X							K4.08	Knowledge of REACTOR PROTECTION SYSTEM design feature(s) and/or interlocks which provide for the following: Complete control rod insertion following SCRAM signal generation	4.2	8
212000 RPS						X						K5.02	Knowledge of the operational implications of the following concepts as they apply to REACTOR PROTECTION SYSTEM :Specific logic arrangements	3.3	9
215003 IRM					X							K4.04	Knowledge of INTERMEDIATE RANGE MONITOR (IRM) SYSTEM design feature(s) and/or interlocks which provide for the following: Varying system sensitivity levels using range switches	2.9	10
215004 Source Range Monitor			X									K2.01	Knowledge of electrical power supplies to the following: SRM channels/detectors	2.6	11
215005 APRM / LPRM										X		A3.03	Ability to monitor automatic operations of the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM including: Meters and recorders	3.3	12
217000 RCIC									X			A2.09	Ability to (a) predict the impacts of the following on the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of Vacuum Pump	2.9	13
218000 ADS	X											2.1.27	Conduct of Operations: Knowledge of system purpose and or function.	2.8	14
223002 PCIS/Nuclear Steam Supply Shutoff							X					K6.06	Knowledge of the effect that a loss or malfunction of the following will have on the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF : Various process instrumentation	2.8	15
239002 SRVs		X										K1.05	Knowledge of the physical connections and/or cause effect relationships between Relief/Safety Valves and the following: Plant Air Systems.	3.4	16
239002 SRVs						X						K5.01	Knowledge of the operational implications of the following concepts as they apply to RELIEF/SAFETY VALVES : Relief function of SRV operation	3.4	17

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2007 NRC Written Examination Outline
Plant Systems – Tier 2 Group 1

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
259002 Reactor Water Level Control					X							K4.12	Knowledge of REACTOR WATER LEVEL CONTROL SYSTEM design feature(s) and/or interlocks which provide for the following: Manual and automatic control of the system	3.5	18
261000 SGTS									X			A2.12	Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High Fuel Pool ventilation radiation: Plant-Specific	3.2	19
262001 AC Electrical Distribution		X										K1.03	Knowledge of the physical connections and/or cause- effect relationships between A.C. ELECTRICAL DISTRIBUTION and the following: Off-site power sources	3.4	20
262002 UPS (AC/DC)									X			A2.01	Ability to (a) predict the impacts of the following on the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Under voltage	2.6	21
263000 DC Electrical Distribution			X									K2.01	Knowledge of electrical power supplies to the following: Major D.C. loads	3.1	22
264000 EDGs				X								K3.03	Knowledge of the effect that a loss or malfunction of the EMERGENCY GENERATORS (DIESEL/JET) will have on following: Major loads powered from electrical buses fed by the emergency generator(s)	4.1	23
300000 Instrument Air						X						K5.01	Knowledge of the operational implications of the following concepts as they apply to the INSTRUMENT AIR SYSTEM: Air compressors	2.5	24
400000 Component Cooling Water									X			A2.03	Ability to (a) predict the impacts of the following on the CCWS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: High/low CCW temperature	2.9	25
400000 Component Cooling Water		X										K1.02	Knowledge of the physical connections and / or cause-effect relationships between CCWS and the following: Loads cooled by CCWS	3.2	26
K/A Category Point Totals:	1/2	5	4	2	3	3	1	0	4/2	1	2	Group Point Total:			26/4

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2007 NRC Written Examination Outline
Plant Systems – Tier 2 Group 2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
204000 RWCU	X											2.4.28	Knowledge of procedures relating to emergency response to sabotage.	3.3	92
286000 Fire Protection	X											2.1.23	Ability to perform specific and integrated plant procedures during all modes of plant operation	4.0	93
201002 RMCS	X											2.1.28	Conduct of Operations: Knowledge of purpose and function of major system components and controls	3.2	27
239001 Main and Reheat Steam						X						K5.05	Knowledge of the operational implications of the following concepts as they apply to Main and Reheat Steam system: Flow Indication	2.8	28
201006 RWM								X				A1.01	Ability to predict and/or monitor changes in parameters associated with operating the ROD WORTH MINIMIZER SYSTEM (RWM) (PLANT SPECIFIC) controls including: Rod position: P-Spec(Not-BWR6)	3.2	29
204000 RWCU							X					K6.09	Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR WATER CLEANUP SYSTEM : CRD hydraulics: Plant-Specific	2.7	30
215001 Traversing In-core Probe											X	A4.03	Ability to manually operate and/or monitor in the control room: Isolation valves: Mark-I&II(Not-BWR1)	3.0	31
215002 RBM										X		A3.01	Ability to monitor automatic operations of the ROD BLOCK MONITOR SYSTEM including: Four rod display: BWR-3,4,5	3.1	32
216000 Nuclear Boiler Inst.					X							K4.03	Knowledge of the Nuclear Boiler Instrumentation design features and/or interlocks which provide for the following: Redundancy of sensors.	3.4	33
226001 RHR/LPCI: CTMT Spray Mode		X										K1.11	Knowledge of the physical connections and/or cause- effect relationships between RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE and the following: Component cooling water systems	2.8	34
241000 Reactor/Turbine Pressure Regulator										X		A3.09	Ability to monitor automatic operations of the REACTOR/TURBINE PRESSURE REGULATING SYSTEM including: Control/governor valve operation	3.3	35

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2007 NRC Written Examination Outline
Plant Systems – Tier 2 Group 2

System #/Name	G	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	Number	K/A Topics	Imp.	Q#
256000 Reactor Condensate								X				A1.04	Ability to predict and/or monitor changes in parameters associated with operating the REACTOR CONDENSATE SYSTEM controls including: Hotwell level	2.9	36
272000 Radiation Monitoring							X					K6.03	Knowledge of the effect that a loss or malfunction of the following will have on the RADIATION MONITORING SYSTEM : AC power	2.8	37
228000 Plant Ventilation											X	A4.01	Ability to operate and/or monitor in the control room: Start and Stop fans	3.1	38
K/A Category Point Totals:	1/2	1	0	0	1	1	2	2	0/0	2	2	Group Point Total:			12/2

Facility:	Pilgrim	Date of Exam:	2/26/2007			
Category	K/A #	Topic	RO		SRO-Only	
			IR	Q#	IR	Q#
1. Conduct of Operations	2.1.11	Knowledge of less than one hour technical specification action statements for systems.			3.8	94
	2.1.18	Ability to make accurate, clear and concise logs, records, status boards, and reports.	2.9	66		
	2.1.8	Ability to coordinate personnel activities outside the control room.	3.8	67		
	2.1.25	Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.	2.8	68		
	2.1.2	Knowledge of operator responsibilities during all modes of plant operation.	3.0	69		
	Subtotal			4		1
2. Equipment Control	2.2.25	Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.			3.7	95
	2.2.32	Knowledge of the effects of alterations on core configuration.			3.3	96
	2.2.27	Knowledge of the refueling process.	2.6	70		
	2.2.34	Knowledge of the process for determining the internal and external effects on core reactivity.	2.8	71		
	Subtotal			2		2
3. Radiation Control	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.			3.1	97
	2.3.9	Knowledge of the process for performing a containment purge.			3.4	98
	2.3.11	Ability to control radiation releases.	2.7	72		
	2.3.1	Knowledge of 10CFR:20 and related facility radiation control requirements	2.6	73		
	Subtotal			2		2
4. Emergency Procedures / Plan	2.4.21	Knowledge of the parameters and logic used to assess the status of safety functions including: 1 Reactivity control 2. Core cooling and heat removal 3. Reactor coolant system integrity 4. Containment conditions 5. Radioactivity release control.			4.3	99
	2.4.10	Knowledge of annunciator response procedures.			3.1	100
	2.4.5	Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions.	2.9	74		
	2.4.2	Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.	3.9	75		
	Subtotal			2		2
Tier 3 Point Total				10		7

Tier / Group	Randomly Selected K/A	Reason for Rejection
2 / 2	201005 K5.02	System does not exist at facility. Randomly reselected 239001 K5.05
1 / 1	295028 G2.1.27	Impossible to meet KA Topic requirement at SRO level. Randomly reselected G2.1.20 for APE.
2 / 1	262001 G2.1.30	Impossible to meet KA Topic requirement at SRO level. Randomly reselected G2.1.12 for system.
2 / 2	272000 K6.01	No effect between systems, either directly or indirectly. Randomly reselected K6.03 for system
2 / 1	206000 A4.11	Component does not exist at facility. Randomly reselected A4.03 for system. Subsequently randomly selected A4.01 for same reason.
2 / 1	212000 K5.01	Concept does not apply to facility. Randomly reselected K5.02 for system
2 / 1	217000 A2.17	Action does not exist at facility. Randomly reselected A2.09 for topic
2 / 1	261000 A2.14	No action for condition at facility. Randomly reselected A2.12 for topic
1 / 1	295005 AK1.02	Not applicable to facility. Randomly reselected AK1.03 for topic
1 / 1	295024 EA2.03	Impossible to meet topic requirement at SRO Level. Randomly reselected EA2.01 for topic
2 / 2	286000 G2.2.26	Impossible to develop question applicable to facility. Randomly reselected G2.1.23 for topic
1 / 1	**295019 2.1.14	Topic area not directly or indirectly pertinent to system. Randomly reselected 295007 2.4.49 4.0 (Q. #47) <i>This moved a T1 G1 topic to a T1 G2 topic</i>
1 / 1	295001 G2.1.28	Impossible to meet KA Topic requirement at SRO level. Randomly reselected G2.1.20 (4.2) for APE. (Q. #76)
1 / 1	295005 AA.2.04	Impossible to meet KA requirement at SRO level. Randomly reselected 295003 G2.1.12 (4.0) for system. (Q. #77)
2 / 2	201002 G2.1.14	Topic area not directly or indirectly pertinent to system. Randomly reselected G2.1.28 (3.2) for system. (Q. #27)
1 / 1	295025 EA.2.04	Double jeopardy with question #83. Randomly reselected 295037 EA2.07 (4.2) for system. (Q. #81)
1 / 1	**295038 EK1.01	No operational valid question could be written for the topic. Randomly reselected EA 1.01 for topic (Q. #57) <i>This moved a T1 K1 to a T1 A1 topic</i>
1 / 1	295023 AK2.03	Double jeopardy with Q. #19. Randomly reselected 295032 EK2.01 (3.5) for Q.#49
1 / 1	295026 EA1.03	No operational valid question could be written for the topic. Randomly reselected EA 1.01 for topic (Q. #52)
1 / 1	**204000 A2.11	Operational valid SRO level question could not be written for topic. Randomly reselected G2.4.28 (3.3) (Q. #92) <i>This moved a T2 A2 to a T2 G topic</i>
2 / 1	211000 K1.02	Operationally valid question could not be written for topic. Randomly reselected K1.05 (Q. # 6)
2 / 1	239002 2.2.25	Operational Valid question at RO level could not be written for topic. Randomly reselected K1.05. (Q.#16)
2 / 2	216000 2.2.25	Operational Valid question at RO level could not be written for topic. Randomly reselected K4.03. (Q.#33)

ES-401	Record of Rejected K/As	Form ES-401-4
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1 / 1	295031 2.2.22	Operational Valid question at RO level could not be written for topic. Randomly reselected EK1.01. (Q.#55)

Facility: PNPS		Date of Examination: 2/2007
Examination Level (circle one): RO / SRO		Operating Test Number: _____
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, M	JPM – Perform a Short Form Heat Balance Comparison K/A: 2.1.7 (4.4) Ability to evaluate plant performance and make operational judgments based on operating characteristics / reactor behavior / and instrument interpretation.
Conduct of Operations	N	JPM – Verify AOG Recombiner Operation/Direct Field Monitoring K/A: 2.1.25 (3.1) Ability to obtain and interpret station reference materials such as graphs / monographs / and tables which contain performance data.
Equipment Control	N	JPM: Review a danger tagout/Temporarily lift tags K/A: 2.2.13 (3.8) Knowledge of tagging and clearance procedures
Radiation Control	N	JPM: Determine Stay Time RCA ENTRY AND RESPOND TO DOSIMETER ALARM K/A: 2.3.10 (3.3) Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.
Emergency Plan	M	JPM: Perform Dose Assessment Using DAPAR Software K/A: 2.4.44 (4.0) Knowledge of emergency plan protective action recommendations
<p>NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.</p>		
<p>*Type Codes & Criteria:</p> <ul style="list-style-type: none"> (C)ontrol room (D)irect from bank (≤ 3 for ROs; \leq for SROs & RO retakes) (N)ew or (M)odified from bank (> 1) (P)revious 2 exams (≤ 1; randomly selected) (S)imulator 		

Facility: PNPS		Date of Examination: 2/2007
Examination Level (circle one): RO / SRO		Operating Test Number: _____
Administrative Topic (see Note)	Type Code*	Describe activity to be performed
Conduct of Operations	P, M	JPM – Perform a Short Form Heat Balance K/A: 2.1.7 (3.7) Ability to evaluate plant performance and make operational judgments based on operating characteristics / reactor behavior / and instrument interpretation.
Conduct of Operations	N	JPM – Verify AOG Recombine Operation K/A: 2.1.25 (2.8) Ability to obtain and interpret station reference materials such as graphs / monographs / and tables which contain performance data.
Equipment Control	N	JPM: Prepare danger tagout for FPC system K/A: 2.2.13 (3.6) Knowledge of tagging and clearance procedures (3.6).
Radiation Control	N	JPM: Determine Stay Time. RCA ENTRY AND RESPOND TO DOSIMETER ALARM K/A: 2.3.10 (2.9) Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.
Emergency Plan		
<p>NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.</p>		
<p>*Type Codes & Criteria:</p> <p>(C)ontrol room</p> <p>(D)irect from bank (≤ 3 for ROs; \leq for SROs & RO retakes)</p> <p>(N)ew or (M)odified from bank (> 1)</p> <p>(P)revious 2 exams (≤ 1; randomly selected)</p> <p>(S)imulator</p>		

Facility: PNPS		Date of Examination: 2/2007	
Exam Level (circle one): RO / SRO(I) / SRO (U)		Operating Test No.:	
Control Room Systems® (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U, including 1 ESF)			
System / JPM Title		Type Code*	Safety Function
S-1	201003 Control Rod and Drive Mechanism React to a stuck control rod during reactor startup	M, A, L, S	1
S-2	217000 Reactor Core Isolation Cooling System Inject to RPV with RCIC	M, A, S	2
S-3	262001 A.C. Electrical Distribution Transfer Bus A5 to UAT from EDG	D, S	6
S-4	206000 High Pressure Coolant Injection System Operate HPCI for pressure Control	N, A, S	4
S-5	400000 Component Cooling Water System Recover RBCCW Loop B with an elevated Drywell Temperature	M, A, S	8
S-6	239001 Main and Reheat Steam System Reopen MSIVs following an MSIV Closure	N, S	3
S-7	288000 Plant Ventilation Systems Resetting Secondary Containment isolation	D, S	9
S-8	223001 Primary Containment System Operate the Direct Torus Vent to Maintain Primary Containment Pressure Below the PCPL (RO Only)	D, S	5
In-Plant Systems® (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
P-1	295016 Control Room Abandonment Reactor Scram and RFP trip from Outside Control Room	M, E	7
P-2	239001 Main and Reheat Steam System Defeat MSIV Isolation Signals	D, E	3
P-3	201001 Control Rod Drive Hydraulic System Shift CRD Flow Control Valves	D, R	1
<p>@ All RO and SRO-I control room (and in-plant) systems must be different and serve different safety functions; all 5 SRO-U systems must serve different safety functions; in-plant systems and functions may overlap those tested in the control room.</p>			
* Type Codes		Criteria for RO / SRO-I / SRO-U	
(A)lternate path		4-6 / 4-6 / 2-3	
(C)ontrol room			
(D)irect from bank		≤ 9 / ≤ 8 / ≤ 4	
(E)mergency or abnormal in-plant		≥ 1 / ≥ 1 / ≥ 1	
(L)ow-Power / Shutdown		≥ 1 / ≥ 1 / ≥ 1	
(N)ew or (M)odified from bank including 1(A)		≥ 2 / ≥ 2 / ≥ 1	
(P)revious 2 exams		≤ 3 / ≤ 3 / ≤ 2 (randomly selected)	
(R)CA		≥ 1 / ≥ 1 / ≥ 1	
(S)imulator			

Facility:	PILGRIM	Scenario No.:	2	Op Test No.:	2007 NRC
Examiners:	_____	Operators:	_____	_____	_____
Initial Conditions:	<ul style="list-style-type: none"> Power is 2.5% with a startup in progress. 2.2.96, Attachment 15, preset checks are done on all feed pumps. Two Condensate pumps in service. Running additional second condensate pump to wear it in. Override – mode switch in RUN (mode switch failure) 				
Turnover:	<p>Startup in progress from a refuel outage IAW PNPS 2.1.1. At 5% power, transfer RMS to run and resume pulling control rods.</p> <p>“B” secondary condensate pump is being run to wear it in.</p>				
Critical Task:	Initiates ARI.				
	Emergency Depressurization.				
	Enter 5.3.24 and supplement emergency depressurization.				
Event No.	Malfunction No.	Event Type*	Event Description		
1	N/A	R – RO N – CRS	Pull rods to continue power ascension. Transfer RMS to run.		
2	NM21E	I – RO	APRM “E” fails downscale. (TS)		
3	RD02	C – RO	In service CRD flow control valve fails closed. (AOP)		
4	RD0 22 - 23	C – RO	Control rod 22 – 31 drifts outward. (TS) (AOP)		
5	N/A	N – BOP	RFP ‘A’ intermittent TBCCW leak, place RFP ‘B’ in service.		
6		I – BOP	RWCU Pump ‘A’ RBCCW Temp High, pump fails to auto trip.		
7	PC02 RM07	M – ALL	RWCU leak leading to scram. (EOP)		
8	RP14A	I – RO	Manual scram failure. ARI required.		
9	RM07	M – ALL	RWCU leak leads to Emergency Depressurization. (EOP - C)		
10	RH04B	C – BOP	SRV “B” fails to open.		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

Facility:	PILGRIM	Scenario No.:	4	Op Test No.:	2007 NRC
Examiners:	_____	Operators:	_____	_____	_____
	_____		_____	_____	_____
	_____		_____	_____	_____
Initial Conditions:	<ul style="list-style-type: none"> • Power is 100%. • HPCI OOS for Aux Oil Pump Replacement – 14 Day LCO. • RBCCW Pump A (P-202A) OOC, Tracking LCO. • LPRM 36-13-B is bypassed. 				
Turnover:	<ul style="list-style-type: none"> • Shift TBCCW Pumps in preparation for vibration checks on B Pump. • Lower power to 90% for control rod pattern adjustment. 				
Critical Task:	Spray Drywell.				
	Emergency Depressurization.				
Event No.	Malf. No.	Event Type*	Event Description		
1	N/A	N – BOP	Shift TBCCW Pumps in preparation for vibration checks on B Pump.		
2	N/A	R – RO	Reduce power with Recirc.		
3	NM17 36-45-B	I – ALL	LPRM 36-45-B fails upscale. (TS) (AOP)		
4	TC06	I BOP	EPR Pressure Oscillations. (TS) (AOP)		
5	RR20A	I – RO	"B" Recirc Flow Controller fails upscale. (TS) (AOP)		
6	MS14D	M – ALL	"D" SRV fails open. Manual reactor scam. (AOP) (EOP)		
7	RH04B	C – BOP	PASS H2/O2 Sample valves fail to Isolate.		
8		C – BOP	RBCCW to "A" RHR HX inlet valve fails shut.		
9	PC22	M – ALL	"D" SRV tail pipe fails leading to Emergency Depressurization. (EOP - C)		
* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor					

Facility:	PILGRIM	Scenario No.:	3	Op Test No.:	2007 NRC
Examiners:	_____	Operators:	_____		
	_____		_____		
	_____		_____		
Initial Conditions:	<ul style="list-style-type: none"> Power is ~55%. Defeat Group V Isolation HPCI OOS for Aux Oil Pump Replacement – 14 Day LCO. RBCCW Pump A (P-202A) OOC, Tracking LCO. LPRM 36-13-B is bypassed. 				
Turnover:	<p>Insert control rods to lower reactor power to 50% for emergency backwash.</p> <p>The first two steps of the RPR array have been inserted.</p> <p>Seawater Pump "B" amps are elevated. Remove Seawater Pump "B" from service and perform emergency backwash.</p> <p>Engineering is standing by in the screen house to determine when to secure the backwash.</p>				
Critical Task:	Inject SLC.				
	Prevent all injection into the vessel except from SBLC and CRD.				
	Insert all control rods via manual scram.				
Event No.	Malfunction No.	Event Type*	Event Description		
1	N/A	R – RO	Insert control rods to lower reactor power to 50%		
2	N/A	N – BOP	Remove Seawater pump "B" from service for emergency backwash.		
3	RR11A	C – RO	'A' RRP pump motor vibration high.		
4	RR04B	I – RO	'B' Recirc Loop flow unit failure (TS)		
5	RD05A	C – RO	'A' CRD Pump Trip. (AOP)		
6	RR13A RR13B	C – RO	'A' RRP Inner Seal Failure. A RRP Outer Seal Failure. (AOP) (TS)		
7	TC06	C – BOP	RCIC Steam Leak, failure to auto isolate. (TS)		
8	TC01	M – ALL	Main Turbine Trip, ATWS. (EOP)		
9		C – RO	First squib valve fails to open when fired.		
10		C – RO	RWCUC MO80 fails to isolate automatically.		
<p>* (N)ormal, (R)eactivity, (I)nstrument, (C)omponent, (M)ajor</p>					