

**Facility:** PVNGS

Printed: 07/13/2007

Date Of Exam: 06/29/2007

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 Evolutions	1	3	3	3	N/A			3	3	N/A			3	18	0	0	0	
	2	1	2	1	N/A			2	2	N/A			1	9	0	0	0	
	Tier Totals	4	5	4	N/A			5	5	N/A			4	27	0	0	0	
2. Plant Systems	1	3	2	3	3	2	2	3	3	2	2	3	28	0	0	0	0	
	2	0	1	1	1	1	1	1	1	1	1	1	10	0	0	0	0	
	Tier Totals	3	3	4	4	3	3	4	4	3	3	4	38	0	0	0	0	
3. Generic Knowledge And Abilities Categories				1		2		3		4		10		1	2	3	4	0
				3		2		2		3				0	0	0	0	

**Note:**

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.
3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for 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.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

# PWR RO Examination Outline

Printed 04/13/2007

Facility: PVNGS

ES - 401

## Plant Systems - Tier 2 / Group 2

Form ES-401-2

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
001 Control Rod Drive		X										K2.01 - One-line diagram of power supply to M/G sets	3.5	1
011 Pressurizer Level Control					X							K5.09 - Reason for manually controlling PZR level	2.6	1
015 Nuclear Instrumentation							X					A1.08 - Changes in RCS temperature	3.3*	1
016 Non-nuclear Instrumentation										X		A4.01 - NNI channel select controls	2.9*	1
017 In-core Temperature Monitor						X						K6.01 - Sensors and detectors	2.7	1
028 Hydrogen Recombiner and Purge Control								X				A2.02 - LOCA condition and related concern over hydrogen	3.5	1
033 Spent Fuel Pool Cooling			X									K3.03 - Spent fuel temperature	3.0	1
055 Condenser Air Removal	X											K1.06 - PRM system	2.6	1
072 Area Radiation Monitoring				X								K4.03 - Plant ventilation systems	3.2*	1
075 Circulating Water											X	2.1.1 - Knowledge of conduct of operations requirements.	3.7	1

**K/A Category Totals:**    1    1    1    1    1    1    1    1    0    1    1

**Group Point Total:**    10

# PWR RO Examination Outline

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Facility: PVNGS

ES - 401

Plant Systems - Tier 2 / Group 1

Form ES-401-2

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
003 Reactor Coolant Pump					X							K5.03 - Effects of RCP shutdown on T-ave., including the reason for the unreliability of T-ave. in the shutdown loop	3.1	1
004 Chemical and Volume Control					X							K5.30 - Relationship between temperature and pressure in CVCS components during solid plant operation	3.8	1
004 Chemical and Volume Control								X				A2.02 - Loss of PZR level (failure mode)	3.9	1
005 Residual Heat Removal				X								K4.10 - Control of RHR heat exchanger outlet flow	3.1	1
006 Emergency Core Cooling				X								K4.17 - Safety Injection valve interlocks	3.8	1
007 Pressurizer Relief/Quench Tank			X									K3.01 - Containment	3.3	1
007 Pressurizer Relief/Quench Tank					X							K5.02 - Method of forming a steam bubble in the PZR	3.1	1
008 Component Cooling Water	X											K1.01 - SWS	3.1	1
010 Pressurizer Pressure Control				X								K4.01 - Spray valve warm-up	2.7	1
012 Reactor Protection						X						K6.11 - Trip setpoint calculators	2.9*	1
013 Engineered Safety Features Actuation						X						K6.01 - Sensors and detectors	2.7*	1
013 Engineered Safety Features Actuation										X		A4.03 - ESFAS initiation	4.5	1
022 Containment Cooling	X											K1.04 - Chilled water	2.9*	1
026 Containment Spray							X					A1.01 - Containment pressure	3.9	1
039 Main and Reheat Steam			X									K3.04 - MFW pumps	2.5*	1
039 Main and Reheat Steam											X	2.2.22 - Knowledge of limiting conditions for operations and safety limits.	3.4	1
059 Main Feedwater							X					A1.03 - Power level restrictions for operation of MFW pumps and valves	2.7*	1
059 Main Feedwater											X	2.4.26 - Knowledge of facility protection requirements including fire brigade and portable fire fighting equipment usage.	2.9	1
061 Auxiliary/Emergency Feedwater		X										K2.02 - AFW electric driven pumps	3.7*	1
062 AC Electrical Distribution	X											K1.04 - Off-site power sources	3.7	1

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ES - 401

## Plant Systems - Tier 2 / Group 1

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Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
062 AC Electrical Distribution										X		A4.04 - Local operation of breakers	2.6	1
063 DC Electrical Distribution								X				A2.01 - Grounds	2.5	1
064 Emergency Diesel Generator								X				A2.11 - Conditions (minimum load) required for unloading an ED/G	2.6	1
073 Process Radiation Monitoring			X									K3.01 - Radioactive effluent releases	3.6	1
076 Service Water		X										K2.04 - Reactor building closed cooling water	2.5*	1
078 Instrument Air									X			A3.01 - Air pressure	3.1	1
103 Containment							X					A1.01 - Containment pressure, temperature, and humidity	3.7	1
103 Containment									X			A3.01 - Containment isolation	3.9	1

**K/A Category Totals:**    3    2    3    3    3    2    3    3    2    2    2

**Group Point Total:**    28

# PWR RO Examination Outline

Printed 04/13/2007

Facility: PVNGS

ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000024 Emergency Boration / 1					X		AA2.06 - When boron dilution is taking place	3.6	1
000032 Loss of Source Range NI / 7			X				AK3.02 - Guidance contained in EOP for loss of source-range nuclear instrumentation	3.7*	1
000036 Fuel Handling Accident / 8	X						AK1.02 - SDM	3.4	1
000051 Loss of Condenser Vacuum / 4			X				AK3.01 - Loss of steam dump capability upon loss of condenser vacuum	2.8*	1
000067 Plant Fire On-site / 9				X			AA1.08 - Fire fighting equipment used on each class of fire	3.4	1
000076 High Reactor Coolant Activity / 9		X					AK2.01 - Process radiation monitors	2.6	1
CE/A13 Natural Circ. / 4					X		EA2.1 - Facility conditions and selection of appropriate procedures during abnormal and emergency operations	2.7	1
CE/A16 Excess RCS Leakage / 2	X						EK1.1 - Components, capacity, and function of emergency systems	3.2	1
CE/E09 Functional Recovery		X					EK2.1 - Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	3.6	1

**K/A Category Totals:**    2    2    2    1    2    0

**Group Point Total:**    9

# PWR RO Examination Outline

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ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000008 Pressurizer Vapor Space Accident / 3			X				AK3.05 - ECCS termination or throttling criteria	4.0	1
000009 Small Break LOCA / 3	X						EK1.01 - Natural circulation and cooling, including reflux boiling	4.2	1
000015/000017 RCP Malfunctions / 4	X						AK1.01 - Natural circulation in a nuclear reactor power plant	4.4	1
000022 Loss of Rx Coolant Makeup / 2			X				AK3.02 - Actions contained in SOPs and EOPs for RCPs, loss of makeup, loss of charging, and abnormal charging	3.5	1
000025 Loss of RHR System / 4					X		AA2.07 - Pump cavitation	3.4	1
000026 Loss of Component Cooling Water / 8						X	2.3.2 - Knowledge of facility ALARA program.	2.5	1
000027 Pressurizer Pressure Control System Malfunction / 3		X					AK2.03 - Controllers and positioners	2.6	1
000029 ATWS / 1						X	2.4.3 - Ability to identify post-accident instrumentation.	3.5	1
000038 Steam Gen. Tube Rupture / 3						X	2.4.45 - Ability to prioritize and interpret the significance of each annunciator or alarm.	3.3	1
000040 Steam Line Rupture - Excessive Heat Transfer / 4	X						AK1.06 - High-energy steam line break considerations	3.7	1
000055 Station Blackout / 6				X			EA1.02 - Manual ED/G start	4.3	1
000056 Loss of Off-site Power / 6				X			AA1.26 - Circuit breakers	2.5*	1
000057 Loss of Vital AC Inst. Bus / 6					X		AA2.05 - S/G pressure and level meters	3.5	1
000058 Loss of DC Power / 6				X			AA1.01 - Cross-tie of the affected dc bus with the alternate supply	3.4*	1
000062 Loss of Nuclear Svc Water / 4					X		AA2.02 - The cause of possible SWS loss	2.9	1
000065 Loss of Instrument Air / 8			X				AK3.04 - Cross-over to backup air supplies	3.0	1
CE/E02 Reactor Trip - Stabilization - Recovery / 1		X					EK2.1 - Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	3.3	1
CE/E06 Loss of Main Feedwater / 4		X					EK2.1 - Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	3.3	1

**K/A Category Totals:**    3    3    3    3    3    3

**Group Point Total:**    18

**Generic Knowledge and Abilities Outline (Tier 3)**

**PWR RO Examination Outline**

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**Facility:** PVNGS

**Form ES-401-3**

<u>Generic Category</u>	<u>KA</u>	<u>KA Topic</u>	<u>Imp.</u>	<u>Points</u>
<b>Conduct of Operations</b>	2.1.14	Knowledge of system status criteria which require the notification of plant personnel.	2.5	1
	2.1.23	Ability to perform specific system and integrated plant procedures during all modes of plant operation.	3.9	1
	<b>Category Total:</b>			<b>2</b>
<b>Equipment Control</b>	2.2.11	Knowledge of the process for controlling temporary changes.	2.5	1
	2.2.12	Knowledge of surveillance procedures.	3.0	1
	2.2.34	Knowledge of the process for determining the internal and external effects on core reactivity.	2.8	1
	<b>Category Total:</b>			<b>3</b>
<b>Radiation Control</b>	2.3.9	Knowledge of the process for performing a containment purge.	2.5	1
	2.3.11	Ability to control radiation releases.	2.7	1
	<b>Category Total:</b>			<b>2</b>
<b>Emergency Procedures/Plan</b>	2.4.5	Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions.	2.9	1
	2.4.18	Knowledge of the specific bases for EOPs.	2.7	1
	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.	3.7	1
	<b>Category Total:</b>			<b>3</b>

**Generic Total: 10**

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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 Evolutions	1	0	0	0	N/A			0	0	N/A			0	0	4	2	6	
	2	0	0	0				0	0				0	0	0	3	1	4
	Tier Totals	0	0	0				0	0				0	0	0	0	7	3
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5		
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	6	2	8		
3. Generic Knowledge And Abilities Categories				1		2		3		4		0		1	2	3	4	7
				0		0		0		0				3	1	2	1	

Note:

1. Ensure that at least two topics from every K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).
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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.
8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.
9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.



# PWR SRO Examination Outline

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Facility: PVNGS

ES - 401

## Plant Systems - Tier 2 / Group 2

Form ES-401-2

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
033 Spent Fuel Pool Cooling								X				A2.03 - Abnormal spent fuel pool water level or loss of water level	3.5	1
056 Condensate								X				A2.04 - Loss of condensate pumps	2.8*	1
075 Circulating Water								X				A2.03 - Safety features and relationship between condenser vacuum, turbine trip, and steam dump	2.7*	1

**K/A Category Totals:**    0    0    0    0    0    0    0    0    3    0    0    0

**Group Point Total:**    3

# PWR SRO Examination Outline

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Facility: PVNGS

ES - 401

## Plant Systems - Tier 2 / Group 1

Form ES-401-2

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
006 Emergency Core Cooling								X				A2.03 - System leakage	3.7	1
010 Pressurizer Pressure Control											X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
012 Reactor Protection								X				A2.04 - Erratic power supply operation	3.2	1
013 Engineered Safety Features Actuation											X	2.2.18 - Knowledge of the process for managing maintenance activities during shutdown operations.	3.6	1
022 Containment Cooling								X				A2.01 - Fan motor over-current	2.7	1

**K/A Category Totals:**    0    0    0    0    0    0    0    0    3    0    0    2

**Group Point Total:**    5

# PWR SRO Examination Outline

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ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000003 Dropped Control Rod / 1					X		AA2.03 - Dropped rod, using in-core/ex-core instrumentation, in-core or loop temperature measurements	3.8	1
000061 ARM System Alarms / 7						X	2.2.6 - Knowledge of the process for making changes in procedures as described in the safety analysis report.	3.3	1
000068 Control Room Evac. / 8					X		AA2.02 - Local boric acid flow	4.2*	1
CE/E09 Functional Recovery					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	4.0	1

**K/A Category Totals:**    0    0    0    0    3    1

**Group Point Total:**    4

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ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000007 Reactor Trip - Stabilization - Recovery / 1					X		EA2.04 - If reactor should have tripped but has not done so, manually trip the reactor and carry out actions in ATWS EOP	4.4	1
000008 Pressurizer Vapor Space Accident / 3						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
000011 Large Break LOCA / 3					X		EA2.11 - Conditions for throttling or stopping HPI	4.3	1
000025 Loss of RHR System / 4					X		AA2.03 - Increasing reactor building sump level	3.8	1
000054 Loss of Main Feedwater / 4						X	2.4.47 - Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	3.7	1
CE/E05 Steam Line Rupture - Excessive Heat Transfer / 4					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	4.2	1

**K/A Category Totals:    0    0    0    0    4    2**

**Group Point Total:    6**

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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 Evolutions	1	0	0	0	N/A			0	0	N/A			0	0	4	2	6	
	2	0	0	0				0	0				0	0	0	3	1	4
	Tier Totals	0	0	0				0	0				0	0	0	0	7	3
2. Plant Systems	1	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5		
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	
	Tier Totals	0	0	0	0	0	0	0	0	0	0	0	0	6	2	8		
3. Generic Knowledge And Abilities Categories				1		2		3		4		0		1	2	3	4	7
				0		0		0		0				3	1	2	1	

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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.

**Generic Knowledge and Abilities Outline (Tier 3)**

**PWR SRO Examination Outline**

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**Form ES-401-3**

<u>Generic Category</u>	<u>KA</u>	<u>KA Topic</u>	<u>Imp.</u>	<u>Points</u>
<b>Conduct of Operations</b>	2.1.7	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1
	2.1.11	Knowledge of less than one hour technical specification action statements for systems.	3.8	1
	2.1.34	Ability to maintain primary and secondary plant chemistry within allowable limits.	2.9	1
	<b>Category Total:</b>			<b>3</b>
<b>Equipment Control</b>	2.2.3	(multi-unit) Knowledge of the design, procedural, and operational differences between units.	3.3	1
	<b>Category Total:</b>			<b>1</b>
<b>Radiation Control</b>	2.3.3	Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (e.g., waste disposal and handling systems).	2.9	1
	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	3.1	1
	<b>Category Total:</b>			<b>2</b>
<b>Emergency Procedures/Plan</b>	2.4.46	Ability to verify that the alarms are consistent with the plant conditions.	3.6	1
	<b>Category Total:</b>			<b>1</b>
<b>Generic Total:</b>				<b>7</b>

# PWR SRO Examination Outline

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ES - 401

## Plant Systems - Tier 2 / Group 2

Form ES-401-2

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
033 Spent Fuel Pool Cooling								X				A2.03 - Abnormal spent fuel pool water level or loss of water level	3.5	1
056 Condensate								X				A2.04 - Loss of condensate pumps	2.8*	1
075 Circulating Water								X				A2.03 - Safety features and relationship between condenser vacuum, turbine trip, and steam dump	2.7*	1

**K/A Category Totals:**    0    0    0    0    0    0    0    0    3    0    0    0

**Group Point Total:**    3

# PWR SRO Examination Outline

Printed 04/13/2007

Facility: PVNGS

ES - 401

## Plant Systems - Tier 2 / Group 1

Form ES-401-2

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points
006 Emergency Core Cooling								X				A2.03 - System leakage	3.7	1
010 Pressurizer Pressure Control											X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
012 Reactor Protection								X				A2.04 - Erratic power supply operation	3.2	1
013 Engineered Safety Features Actuation											X	2.2.18 - Knowledge of the process for managing maintenance activities during shutdown operations.	3.6	1
022 Containment Cooling								X				A2.01 - Fan motor over-current	2.7	1

**K/A Category Totals:**    0    0    0    0    0    0    0    0    3    0    0    2

**Group Point Total:**    5



# PWR SRO Examination Outline

Printed 04/13/2007

Facility: PVNGS

ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 2 Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000061 ARM System Alarms / 7						X	2.2.6 - Knowledge of the process for making changes in procedures as described in the safety analysis report.	3.3	1
000068 Control Room Evac. / 8					X		AA2.02 - Local boric acid flow	4.2*	1
000074 Inad. Core Cooling / 4					X		EA2.08 - The effect of turbine bypass valve operation on RCS temperature and pressure	4.6*	1
CE/E09 Functional Recovery					X		EA2.2 - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments	4.0	1

**K/A Category Totals:**    0    0    0    0    3    1

**Group Point Total:**    4

# PWR SRO Examination Outline

Printed 04/13/2007

Facility: PVNGS

ES - 401 Emergency and Abnormal Plant Evolutions - Tier 1 / Group 1 Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points
000007 Reactor Trip - Stabilization - Recovery / 1					X		EA2.04 - If reactor should have tripped but has not done so, manually trip the reactor and carry out actions in ATWS EOP	4.4	1
000008 Pressurizer Vapor Space Accident / 3						X	2.4.1 - Knowledge of EOP entry conditions and immediate action steps.	4.6	1
000011 Large Break LOCA / 3					X		EA2.11 - Conditions for throttling or stopping HPI	4.3	1
000025 Loss of RHR System / 4					X		AA2.03 - Increasing reactor building sump level	3.8	1
000054 Loss of Main Feedwater / 4						X	2.4.47 - Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	3.7	1
000065 Loss of Instrument Air / 8					X		AA2.08 - Failure modes of air -operated equipment	3.3	1

**K/A Category Totals:    0    0    0    0    4    2**

**Group Point Total:    6**

**Generic Knowledge and Abilities Outline (Tier 3)**

**PWR SRO Examination Outline**

Printed: 04/13/2007

**Facility:** PVNGS

**Form ES-401-3**

<u>Generic Category</u>	<u>KA</u>	<u>KA Topic</u>	<u>Imp.</u>	<u>Points</u>
<b>Conduct of Operations</b>	2.1.7	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	4.4	1
	2.1.10	Knowledge of conditions and limitations in the facility license.	3.9	1
	2.1.34	Ability to maintain primary and secondary plant chemistry within allowable limits.	2.9	1
<b>Category Total:</b>				<b>3</b>
<b>Equipment Control</b>	2.2.3	(multi-unit) Knowledge of the design, procedural, and operational differences between units.	3.3	1
	<b>Category Total:</b>			
<b>Radiation Control</b>	2.3.3	Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (e.g., waste disposal and handling systems).	2.9	1
	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.	3.1	1
	<b>Category Total:</b>			
<b>Emergency Procedures/Plan</b>	2.4.46	Ability to verify that the alarms are consistent with the plant conditions.	3.6	1
	<b>Category Total:</b>			
<b>Generic Total:</b>				<b>7</b>