

Facility:		Date of Exam:		Exam Level:										
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	1	2	5					1	5			2	16
	2	2	2	2					3	6			2	17
	3	0	0	1					0	2			0	3
	Tier Totals	3	4	8					4	13			4	36
2. Plant Systems	1	5	0	2	4	3	3	1	0	2	2	1	23	
	2	1	3	2	0	0	3	1	3	3	1	3	20	
	3	3	1	1	2	0	0	0	0	0	1	0	8	
	Tier Totals	9	4	5	6	3	6	2	3	5	4	4	51	
3. Generic Knowledge and Abilities				Cat 1		Cat 2		Cat 3		Cat 4		13		
				5		3		3		2				
<p><b>Note:</b></p> <ol style="list-style-type: none"> <li>1. 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).</li> <li>2. Actual point totals must match those specified in the table.</li> <li>3. 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.</li> <li>4. Systems/evolutions within each group are identified on the associated outline.</li> <li>5. The shaded areas are not applicable to the category/tier.</li> <li>6.* 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.</li> <li>7. 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.</li> </ol>														

ES-401

PWR RO Examination Outline  
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

Form ES-401-4

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000005 Inoperable/Stuck Control Rod / 1 5			1				actions for inoperable CEA	3.4	1
000015/17 RCP Malfunctions / 4 9		1					entry condition seal failure	2.9	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4 11	1						natural circulation verification	3.2	1
000024 Emergency Boration / 1									
000026 Loss of Component Cooling Water / 8 15					1		location of leak	2.9	1
000027 Pressurizer Pressure Control System Malfunction / 3 39					1		heater setpoints	3.2	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4 17				1			harsh environment effects	3.9	1
CE/A11; W/E08 RCS Overcooling - PTS / 4 18			1				saturation margin limit basis	3.1	1
000051 Loss of Condenser Vacuum / 4									
000055 Station Blackout / 6 19			1				MSIS actions in EOI	4.3	1
000057 Loss of Vital AC Elec. Inst. Bus / 6 20					1		inverter failure effects	3.8	1
000062 Loss of Nuclear Service Water / 4									
000067 Plant Fire On-site / 9 23						1	component susceptibility / protection	3.7	1
000068 (BW/A06) Control Room Evac. / 8 24		1					remote panel layout	3.9	1
000069 (W/E14) Loss of CTMT Integrity / 5 25			1				containment integrity procedure guidance	3.8	1
000074 (W/E06&E07) Inad. Core Cooling / 4 26					1		ICC vs LOCA	4.1	1
BW/E03 Inadequate Subcooling Margin / 4									
000076 High Reactor Coolant Activity / 9 27					1		systems to backflush filters	2.8	1
BW/A02&A03 Loss of NNI-X/Y / 7									
000024 Emergency Boration / 1 30			1				AOI entry condition	4.1	1

000026 Loss of Component Cooling Water / 8 32						1	purpose and function of components	3.2	1
K/A Category Totals:	1	2	5	1	5	2	Group Point Total:		16

NUREG-1021, Revision 8

34 of 45



000032 Loss of Source Range NI / 7 40		1					power supply effect	2.7	1
CE/E09 Functional Recovery									
K/A Category Point Totals:	2	2	2	3	6	2	Group Point Total:		17

35 of 45

NUREG-1021, Revision 8

[illegible]

K/A Category Point Totals:	0	0	1	0	2	0	Group Point Total:	3

NUREG-1021, Revision 8

36 of 45

ES-401

PWR RO Examination Outline  
Plant Systems - Tier 2/Group 1

Form ES-401-4

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive 57	1											cause / effect RPS	4.5	1
003 Reactor Coolant Pump 59	1											excess flow check valves	3.3	1
004 Chemical and Volume Control 4			1									backpressure control	3.7	1
013 Engineered Safety Features Actuation 61	1											ESF initiation	4.2	1
015 Nuclear Instrumentation 63	1											RPS interface	4.1	1
017 In-core Temperature Monitor 64					1							superheat indication	3.7	1
015 Nuclear Instrumentation 13					1							temperature compensation	2.7	1
015 Nuclear Instrumentation 14						1						calibrate switch trips	3.1	1
017 In-core Temperature Monitor 123							1					CET	3.7	1
059 Main Feedwater 68				1								reduction on trip	2.8	1
061 Auxiliary/Emergency Feedwater 69											1	manipulate override	4.0	1
003 Reactor Coolant Pump 22						1						pump restart	2.6	1
071 Waste Gas Disposal 31				1								automatic isolation	2.9	1
072 Area Radiation Monitoring 73				1								release termination	3.3	1
001 Control Rod Drive 56					1							CEA insertion limits	4.3	1
003 Reactor Coolant Pump 58										1		RCP seal pressure indications	3.1	1
001 Control Rod Drive 75			1									secondary parameter effect	3.4	1
004 Chemical and Volume Control 76										1		charging startup	3.8	1
059 Main Feedwater 77	1											SG level control	3.4	1
013 Engineered Safety Features Actuation 46									1			inadvertent actuation	4.1	1
017 In-core Temperature Monitor 82						1						temperature indication	2.7	1
072 Area Radiation Monitoring 28				1								monitoring of fuel handling building	3.3	1





086 Fire Protection	108									1			halon	2.9	1
016 Non-nuclear Instrumentation 92												1	COLSS AZ power tilt	2.9	1
002 Reactor Coolant	103						1						safety relief valves	3.0	1
063 DC Electrical Distribution 80												1	loss of control power effects on pump breaker	2.8	1
K/A Category Point Totals:		1	3	2	0	0	3	1	3	3	1	3	Group Point Total:		20

NUREG-1021, Revision 8

38 of 45

ES-401

PWR RO Examination Outline  
Plant Systems - Tier 2/Group 3

Form ES-401-4

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal 116				1								overpressure mitigation	3.0	1
007 Pressurizer Relief/Quench Tank 110										1		leaking relief valve	3.6	1
008 Component Cooling Water 112			1									RCP effect	4.1	1
027 Containment Iodine Removal 93	1											cause / effect on iodine	3.4	1
028 Hydrogen Recombiner and Purge Control														
034 Fuel Handling Equipment 98	1											nozzle dam seal	2.5	1
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator 114				1								turbine / reactor trip	3.6	1
076 Service Water														
005 Residual Heat Removal 109	1											SDC operation	3.5	1
008 Component Cooling Water 111		1										power supply	3.0	1
K/A Category Point Totals:	3	1	1	2	0	0	0	0	0	1	0	Group Point Total:		8
Plant-Specific Priorities														
System / Topic	Recommended Replacement for...											Reason	Points	

Plant-Specific Priority Total: (limit 10)	
-------------------------------------------	--

39 of 45

NUREG-1021, Revision 8

11 of 45

NUREG-1021, Revision 8

Facility: SONGS 2/3		Date of Exam:		Exam Level:	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1.1	Procedure use	50	3.7	1
	2.1.3	Shift turnover	118	3.0	1
	2.1.20	Control room evacuation	119	4.3	1
	2.1.7	SWC / CCW interface	71	2.8	1
	2.1.29	Valve lineup verification	120	3.4	1
	2.1.				
	Total				
Equipment Control	2.2.22	Safety limits / LCOs	124	3.4	1
	2.2.24	Maintenance activities	60	2.6	1
	2.2.25	Technical specification basis	125	2.5	1
	2.2.				
	2.2.				
	2.2.				
	Total				
Radiation Control	2.3.2	ALARA	122	2.5	1
	2.3.11	Radiation levels / exposure control	43	2.7	1
	2.3.4	Radiation exposure permit	72	2.5	1
	2.3.				
	2.3.				
	2.3.				
	Total				
Emergency Procedures/ Plan	2.4.1	EOP entry	66	4.3	1
	2.4.27	Fire procedure	107	3.0	1
	2.4.				
	2.4.				
	2.4.				
	2.4.				
	Total				
Tier 3 Point Total (RO)					13

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c#
1.	Questions and answers technically accurate and applicable to facility					
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available					
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401					
4.	No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	— NRC	Other			
4.	[No (Less than 5 percent) Question duplication from the license screening/audit exam (if independently written)] was controlled as indicated below (check the item that applies) and appears appropriate: the audit exam was systematically and randomly developed; or the audit exam was completed before the license exam was started; or the licensee certifies that there is no duplication; or the license exam was prepared by the NRC					
5.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank 49	Modified 21	New 30		
6.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory 49	C/A 51			
7.	References/handouts provided do not give away answers					
8.	Question content conforms with specific K/A statements in the distribution meets previously approved examination outline; deviations are justified					
9.	Question psychometric quality and format meet ES, Appendix B, guidelines					
10.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet					
Printed Name / Signature				Date		
a. Author				_____		
b. Facility Reviewer(*)				_____		
c. NRC Chief Examiner(*)				_____		
d. NRC Regional Supervisor(*)				_____		
<p>Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.</p> <p># See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.</p> <p>[ ] The items in brackets do not apply to NRC-prepared examinations.</p>						

**U.S. Nuclear Regulatory Commission  
Site-Specific  
Written Examination****Applicant Information**

Name:	Region: I / II / III / IV
Date:	Facility/Unit:
License Level: RO / SRO	Reactor Type: W / CE / BW / GE
Start Time:	Finish Time:

**Instructions**

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected five hours after the examination starts.

**Applicant Certification**

All work done on this examination is my own. I have neither given nor received aid.

\_\_\_\_\_  
Applicant's Signature

**Results**

Examination Value	_____	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

Facility:		Date of Exam:		Exam Level:									
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	2	7				2	6			2	24
	2	0	3	3				4	4			2	16
	3	1	0	0				0	2			0	3
	Tier Totals	6	5	10				6	12			4	43
2. Plant Systems	1	2	2	1	3	2	0	2	2	0	2	3	19
	2	3	1	1	2	0	3	0	2	3	1	1	17
	3	1	1	0	1	0	0	0	0	0	1	0	4
	Tier Totals	6	4	2	6	2	3	2	4	3	4	4	40
3. Generic Knowledge and Abilities				Cat 1		Cat 2		Cat 3		Cat 4		17	
				6		4		3		4			
<p>Note: 1. 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).</p> <p>2. Actual point totals must match those specified in the table.</p> <p>3. 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.</p> <p>4. Systems/evolutions within each group are identified on the associated outline.</p> <p>5. The shaded areas are not applicable to the category/tier.</p> <p>6.* 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.</p> <p>7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the SRO 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.</p>													

ES-401

PWR SRO Examination Outline  
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

Form ES-401-3

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1 1	1						effects on RCS temperature & Pzr level	3.7	1
000003 Dropped Control Rod / 1 2	1						power level effects on flux	3.7	1
000005 Inoperable/Stuck Control Rod / 1 79	1						stuck rod recovery	3.9	1
000011 Large Break LOCA / 3 6	1						natural circulation & reflux boiling	4.4	1
W/E04 LOCA Outside Containment / 3 7					1		procedure selection	4.2	1
W/E01 & E02 Rediagnosis & SI Termination / 3 8					1		operational procedure adherence	4.0	1
000015/17 RCP Malfunctions / 4 9		1					entry condition seal failure	2.9	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4 11	1						natural circulation verification	3.5	1
000024 Emergency Boration / 1 12			1				EOI actions	4.4	1
000026 Loss of Component Cooling Water / 8									
000029 Anticipated Transient w/o Scram / 1 16				1			trip breaker power supply	4.0	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4 17				1			harsh environment effects	4.2	1
CE/A11; W/E08 RCS Overcooling - PTS / 4 18			1				saturation margin limit basis	3.5	1
000005 Inoperable/Stuck Control Rod / 1 5			1				actions for inoperable CEA	4.1	1
000055 Station Blackout / 6 19			1				MSIS actions in EOI	4.6	1
000057 Loss of Vital AC Elec. Inst. Bus / 6 20					1		effects of inverter failure	4.1	1
000059 Accidental Liquid RadWaste Rel. / 9 21						1	radiation release control	3.2	1
000024 Emergency Boration / 1 29					1		gravity feed method	4.1	1
000067 Plant Fire On-site / 9 23						1	component susceptibility / protection	4.4	1
000068 (BW/A06) Control Room Evac. / 8 24		1					remote panel layout	4.0	1
000069 (W/E14) Loss of CTMT Integrity / 5 25			1				containment integrity procedure guidance	4.2	1



000074 (W/E06&E07) Inad. Core Cooling / 4 26					1		ICC vs LOCA	4.7	1
000057 Loss of Vital AC Elec. Inst. Bus / 6 81			1				transfer in-rush current loads	4.4	1
000076 High Reactor Coolant Activity / 9 27					1		systems to backflush filters	3.4	1
000024 Emergency Boration / 1 30			1				AOI entry condition	4.4	1
K/A Category Totals:	5	2	7	2	6	2	Group Point Total:		24

27 of 45

NUREG-1021, Revision 8

ES-401

PWR SRO Examination Outline  
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

Form ES-401-3

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1 33				1			actions prior to exit SPTA	3.7	1
BW/A01 Plant Runback / 1									
BW/A04 Turbine Trip / 4									
000008 Pressurizer Vapor Space Accident / 3 34				1			reset of safety valve	4.2	1
000009 Small Break LOCA / 3 35		1					SG operation	3.3	1
BW/E08; W/E03 LOCA Cutdown - Depress. / 4									
W/E11 Loss of Emergency Coolant Recirc. / 4									
000022 Loss of Reactor Coolant Makeup / 2 37					1		charging line leak	3.8	1
000025 Loss of RHR System / 4 38						1	SDC verification	4.4	1
000027 Pressurizer Pressure Control System Malfunction / 3 39					1		heatesetpoints	3.3	1
000032 Loss of Source Range NI / 7 40		1					power supply effect	3.1	1
000009 Small Break LOCA / 3 36			1				EOI actions	4.5	1
000037 Steam Generator Tube Leak / 3 44			1				actions to minimize leak rate	4.1	1
000038 Steam Generator Tube Rupture / 3 45					1		isolate SG	4.7	1
000054 (CE/E06) Loss of Main Feedwater / 4 47				1			EOI success path	4.4	1
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4 42		1					operator action on LOFW	4.0	1
000058 Loss of DC Power / 6 48					1		loss of DC load impact	3.9	1
000060 Accidental Gaseous Radwaste Rel. / 9 49				1			ventilation system	3.1	1
000061 ARM System Alarms / 7									
W/E16 High Containment Radiation / 9									
000065 Loss of Instrument Air / 8 51			1				isolation effects	3.4	1

CE/E09 Functional Recovery	52						1	direct activities in control room	4.0	1
K/A Category Point Totals:		0	3	3	4	4	2	Group Point Total:	16	

NUREG-1021, Revision 8

28 of 45

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2 53					1		determine proper automatic control	3.4	1
000036 (BW/A08) Fuel Handling Accident / 8									
000056 Loss of Off-site Power / 6 54					1		backup reactor trip signal	4.1	1
BW/E13&E14 EOP Rules and Enclosures									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
CE/A16 Excess RCS Leakage / 2 55	1						identified leakage greater than permitted by technical specifications	3.4	1
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5									
K/A Category Point Totals:	1	0	0	0	2	0	Group Point Total:		3

ES-401

PWR SRO Examination Outline  
Plant Systems - Tier 2/Group 1

Form ES-401-3

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive 56					1							CEA insertion limits	4.7	1
003 Reactor Coolant Pump 58										1		RCP seal pressure indications	3.0	1
004 Chemical and Volume Control 74								1				demineralizer reactivity effect	3.9	1
013 Engineered Safety Features Actuation 61	1											ESF initiation	4.4	1
014 Rod Position Indication 62								1				misaligned CEA impact	3.9	1
015 Nuclear Instrumentation 63	1											RPS interface	4.2	1
017 In-core Temperature Monitor 64					1							superheat indication	4.1	1
022 Containment Cooling														
025 Ice Condenser														
026 Containment Spray 65		1										power supply to containment spray pumps	3.6	1
056 Condensate														
059 Main Feedwater 68				1								reduction on trip	3.0	1
061 Auxiliary/Emergency Feedwater 69											1	manipulate override	3.5	1
063 DC Electrical Distribution 70		1										power sources	3.1	1
068 Liquid Radwaste 85											1	off-site dose determination	3.2	1
071 Waste Gas Disposal														
072 Area Radiation Monitoring 73				1								release termination	3.6	1
001 Control Rod Drive 75			1									secondary parameter effect	3.5	1
004 Chemical and Volume Control 76										1		charging startup	3.4	1
061 Auxiliary/Emergency Feedwater 78				1								water source priority	4.2	1
063 DC Electrical Distribution 80											1	ground indication	2.9	1
003 Reactor Coolant Pump 90							1					high bearing temperature	2.9	1
015 Nuclear Instrumentation 94							1					ASI with COL SS inoperable	3.9	1

K/A Category Point Totals:	2	2	1	3	2	0	2	2	0	2	3	Group Point Total:	19
----------------------------	---	---	---	---	---	---	---	---	---	---	---	--------------------	----

NUREG-1021, Revision 8

30 of 45

ES-401

PWR SRO Examination Outline  
Plant Systems - Tier 2/Group 2

Form ES-401-3

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant 83										1		saturation indication	4.4	1
006 Emergency Core Cooling 84						1						safety injection pumps	3.9	1
010 Pressurizer Pressure Control 86	1											pressure effects on RPS	4.1	1
011 Pressurizer Level Control 87			1									power loss effect on CVCS	3.4	1
012 Reactor Protection 89				1								trip basis	4.3	1
016 Non-nuclear Instrumentation 91								1				detector failure impact	3.1	1
027 Containment Iodine Removal 93	1											cause / effect on iodine	3.7	1
028 Hydrogen Recombiner and Purge Control														
029 Containment Purge														
033 Spent Fuel Pool Cooling 96									1			CIAS & CPIS effects	2.7	1
034 Fuel Handling Equipment 98	1											nozzle dam seal	3.2	1
035 Steam Generator 99						1						MSIVs	3.6	1
039 Main and Reheat Steam 101											1	station blackout effects	2.9	1
055 Condenser Air Removal														
062 AC Electrical Distribution														
064 Emergency Diesel Generator 104									1			load sequencing	3.7	1
073 Process Radiation Monitoring														
075 Circulating Water 106								1				loss of circulating pump	2.7	1
034 Fuel Handling Equipment 97				1								bridge & trolley movement	3.3	1
086 Fire Protection 108									1			halon	3.3	1
103 Containment														
002 Reactor Coolant 103						1						safety relief valves	3.5	1

012 Reactor Protection	95		1										channel power sequence	3.7	1
K/A Category Point Totals:		3	1	1	2	0	3	0	2	3	1	1	Group Point Total:		17



ES-401

PWR SRO Examination Outline  
Plant Systems - Tier 2/Group 3

Form ES-401-3

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal 109	1											SDC operation	3.6	1
007 Pressurizer Relief/Quench Tank 110										1		leaking relief valve	3.8	1
008 Component Cooling Water 111		1										power supply	3.2	1
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator 114				1								turbine / reactor trip	3.9	1
076 Service Water														
078 Instrument Air														
K/A Category Point Totals:	1	1		1						1		Group Point Total:		4

## Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points
Plant-Specific Priority Total: (limit 10)			



Facility: SONGS 2/3		Date of Exam:		Exam Level:	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1.3	Shift turnover	118	3.4	1
	2.1.4	Shift staffing	117	3.4	1
	2.1.20	Control room evacuation	119	4.2	1
	2.1.29	Valve lineup verification	120	3.3	1
	2.1.33	Technical specification entry	121	4.0	1
	2.1.9	Direct personnel 100		4.0	1
	Total				6
Equipment Control	2.2.				
	2.2.22	Safety limits / LCOs	124	4.1	1
	2.2.25	Technical specification basis	125	3.7	1
	2.2.26	Refueling operation	105	3.7	1
	2.2.29	SRO fuel handling	113	3.8	1
	2.2.				
	Total				4
Radiation Control	2.3.2	ALARA	122	2.9	1
	2.3.4	Exposure limits	115	3.1	1
	2.3.6	Radiation levels / exposure control	43	3.2	1
	2.3.				
	2.3.				
	2.3.				
	Total				3
Emergency Procedures/ Plan	2.4.1	EOP entry	66	4.6	1
	2.4.14	EOP transition	67	3.9	1
	2.4.27	Fire procedure	107	3.5	1
	2.4.40	Emergency plan	88	4.0	1
	2.4.				
	2.4.				
	Total				4
Tier 3 Point Total (SRO)					17

Facility:		Date of Exam:		Exam Level: RO/SRO		
Item Description				Initial		
				a	b*	c#
1.	Questions and answers technically accurate and applicable to facility					
2.	a. NRC K/As referenced for all questions b. Facility learning objectives referenced as available					
3.	RO/SRO overlap is no more than 75 percent, and SRO questions are appropriate per Section D.2.d of ES-401					
4.	No more than 25 questions are duplicated from [practice exams, quizzes, and] the last two NRC licensing exams; enter the actual number of duplicated questions at right	—NRC	Other			
4.	[No (Less than 5 percent) Question duplication from the license screening/audit exam (if independently written)] was controlled as indicated below (check the item that applies) and appears appropriate: the audit exam was systematically and randomly developed; or the audit exam was completed before the license exam was started; or the licensee certifies that there is no duplication; or the license exam was prepared by the NRC					
5.	Bank use meets limits (no more than 50 percent from the bank, at least 10 percent new, and the rest modified); enter the actual question distribution at right	Bank 45	Modified 19	New 36		
6.	Between 50 and 60 percent of the questions on the exam (including 10 new questions) are written at the comprehension/analysis level; enter the actual question distribution at right	Memory 48	C/A 52			
7.	References/handouts provided do not give away answers					
8.	Question content conforms with specific K/A statements in the distribution-meets previously approved examination outline; deviations are justified					
9.	Question psychometric quality and format meet ES, Appendix B, guidelines					
10.	The exam contains 100, one-point, multiple choice items; the total is correct and agrees with value on cover sheet					
Printed Name / Signature				Date		
a. Author				_____		
b. Facility Reviewer(*)				_____		
c. NRC Chief Examiner(*)				_____		
d. NRC Regional Supervisor(*)				_____		
<p>Note: * The facility reviewer's signature is not applicable for NRC-developed examinations; two independent NRC reviews are required.</p> <p># See special instructions (Section E.2.c) for Items 1, 4, 5, and 6.</p> <p>[ ] The items in brackets do not apply to NRC-prepared examinations.</p>						

**U.S. Nuclear Regulatory Commission  
Site-Specific  
Written Examination****Applicant Information**

Name:	Region: I / II / III / IV
Date:	Facility/Unit:
License Level: RO / SRO	Reactor Type: W / CE / BW / GE
Start Time:	Finish Time:

**Instructions**

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected five hours after the examination starts.

**Applicant Certification**

All work done on this examination is my own. I have neither given nor received aid.

\_\_\_\_\_  
Applicant's Signature

**Results**

Examination Value	_____ Points
Applicant's Score	_____ Points
Applicant's Grade	_____ Percent