Facility: ANO Unit 2 Date of Examination: 14 July 2003
Examination Level (circle one): RO Operating Test Number: _____

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Condition of Operations 2.1.25	ANO-2-JPM-NRC-ECP Estimated Critical Condition
	Condition of Operations 2.1.29	Knowledge of how to conduct and verify a valve lineup
A.2	Equipment Control 2.2.12	Knowledge of surveillance procedures
A.3	Radiation Control 2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure
A.4	Emergency Procedures/Plan 2.4.34	**Question 1:** Given the following plant conditions: The selected Back Pressure Control Valve, 2CV-4810 has failed closed. Letdown relief valve, 2PSV-4822 has lifted and is stuck open. How long does the Control Room staff have to isolate this leak before it will be classified as RCS leakage for the purpose of Emergency Action Level classification?
		QUESTION 2: A General Emergency has been declared and a site evacuation declared. As a Control Room Operator: How are you accounted for, and, What is the time limit for initial accountability?

Facility: ANO Unit 2 Date of Examination: 7/13/2003

Exam Level: RO Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. ANO-2-JPM-NRC-CVCS2 004 A 4.07 RO - 3.9/SRO - 3.7 Perform Emergency Boration	D/A/S/L	1 Reactivity
b. ANO-2-JPM-NRC- ELECXT 006 A 4.03 RO - 3.3 SRO - 3.1 Synchronize Cross connect of 480 VAC load centers 2B1 and 2B2.	N/S	6 Electrical
c. ANO-2-JPM-NRC-SIT01 006 A4.03 RO - 3.5 SRO - 3.5 Add Borated Water to a Safety Injection Tank	D/A/S	2 Inventory
d. ANO-2-JPM-NRC-EOP1 Secure Containment Spray (during recovery actions for SIAS)	D/S	5 Containment Integrity
e. ANO-2-JPM-NRC- ICI01 Remove an incore detector from service	M/	7 Instrumentation
f. ANO-2-JPM-NRC- New Local start of turbine driven EFW pump	D	4 Heat removal from Reactor Core

g. ANO-2-JPM-NRC-RCP02 Restore Component Cooling Water to Reactor Coolant Pumps (Alternate Path)	D/A/C	6 Plant Service Systems

B.2 Facility Walk-Through

a. ANO-2-JPM-NRC- 2RS4A 062 A2.03 RO - 2.9/SRO - 3.4 Place Alternate Inverter on 2RS4	D/A	6 Electrical
b. ANO-2-JPM-NRC- SFPSW 033 A2.03 RO - 3.1/SRO - 3.5 Add Water from Loop II SW to SFP	M/R/A	8 Plant Service Systems
c. ANO-2-JPM-NRC- Add water to B CCW Surge tank	D	8 Plant Service Systems

* 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

Facility: ANO Unit 2		Date of Examination: 14 July 2003
Examination Level (circle one): SRO		Operating Test Number: _____
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Condition of Operations 2.1.25	ANO-2-JPM-NRC-ECP Estimated Critical Condition
	Condition of Operations 2.1.29	Knowledge of how to conduct and verify a valve lineup
A.2	Equipment Control 2.2.12	Knowledge of surveillance procedures
A.3	Radiation Control 2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure
A.4	Emergency Procedures/Plan 2.4.34	Knowledge of RO tasks performed outside the main control room during emergency operations including system geography and system implications

Facility: ANO Unit 2 Date of Examination: 7/13/2003
Exam Level: SRO Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. ANO-2-JPM-NRC-CVCS2 004 A 4.07 RO - 3.9/SRO - 3.7 Perform Emergency Boration	D/A/S/L	1 Reactivity
b. ANO-2-JPM-NRC- ELECXT 006 A 4.03 RO - 3.3 SRO - 3.1 Synchronize Cross connect of 480 VAC load centers 2B1 and 2B2.	N/S	6 Electrical
c. ANO-2-JPM-NRC-SIT01 006 A4.03 RO - 3.5 SRO - 3.5 Add Borated Water to a Safety Injection Tank	D/A/S	2 Inventory
d. ANO-2-JPM-NRC-EOP1 Secure Containment Spray (during recovery actions for SIAS)	D/S	5 Containment Integrity
e. ANO-2-JPM-NRC- ICI01 Remove incore detector from service	M/	7 Instrumentation
f. ANO-2-JPM-NRC- New Local start of turbine driven EFW pump	D	4 Heat removal from Reactor Core
g. ANO-2-JPM-NRC-RCP02 Restore Component Cooling Water to Reactor Coolant Pumps (Alternate Path)	D/A/C	6 Plant Service Systems

B.2 Facility Walk-Through		
a. ANO-2-JPM-NRC- 2RS4A 062 A2.03 RO - 2.9/SRO - 3.4 Place Alternate Inverter on 2RS4	D/A	6 Electrical
b. ANO-2-JPM-NRC- SFPSW 033 A2.03 RO - 3.1/SRO - 3.5 Add Water from Loop II SW to SFP	M/R/A	8 Plant Service Systems
c. ANO-2-JPM-NRC- Add water to B CCW Surge tank	D	8 Plant Service Systems
* 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		

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	A2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	1	1	5				2	6			1	16
	2	2	2	3				4	4			2	17
	3	1	0	0				1	1			0	3
	Tier Totals	4	3	8				7	11			3	36
2. Plant Systems	1	2	1	2	4	3	1	2	1	3	2	2	23
	2	3	1	2	4	1	2	0	2	2	3	0	20
	3	2	0	1	1	0	0	1	1	1	1	0	8
	Tier Totals	7	2	5	9	4	3	3	4	6	6	2	51

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	13
	4	3	3	3	

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).
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 exam must total 100 points.
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.
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 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.
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.

ES-401	PWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1							Form ES-401-4 (R8, S1)	
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000005 Inoperable/Stuck Control Rod / 1			1				AK3.01 Question #1	4.0	1
000015/17 RCP Malfunctions / 4			1				AK3.03 Question #2	3.7	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4					1		AA2.2 Question #3	2.9	1
000024 Emergency Boration / 1									
000026 Loss of Component Cooling Water / 8				1			AA1.03 Question #4	3.6	1
000027 Pressurizer Pressure Control System Malfunction / 3			1				AK3.03 Question #5	3.7	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4					1		AA2.03 Question #6	4.6	1
CE/A11; W/E08 RCS Overcooling - PTS / 4		1					AK2.2 Question #7	3.2	1
000051 Loss of Condenser Vacuum / 4					1		AA2.02 Question #8	3.9	1
000055 Station Blackout / 6			1				EK3.02 Question #9	4.3	1
000057 Loss of Vital AC Elec. Inst. Bus / 6					1		AA2.19 Question #10	4.0	1
000062 Loss of Nuclear Service Water / 4						1	2.1.23 Question #11	3.9	1
000067 Plant Fire On-site / 9	1						AK1.02 Question #12	3.1	1
000068 (BW/A06) Control Room Evac. / 8				1			AA1.12 Question #13	4.4	1
000069 (W/E14) Loss of CTMT Integrity / 5					1		AA2.01 Question #14	3.7	1
000074 (W/E06&E07) Inad. Core Cooling / 4			1				EK3.11 Question #15	4.0	1
BW/E03 Inadequate Subcooling Margin / 4									
000076 High Reactor Coolant Activity / 9					1		AA2.02 Question #16	2.8	1
BW/A02&A03 Loss of NNI-X/Y / 7									
K/A Category Totals:	1	1	5	2	6	1	Group Point Total:		16

ES-401	PWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2								Form ES-401-4 (R8, S1)
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1	1						AK1.03 Question #17	3.9	1
000003 Dropped Control Rod / 1						1	2.1.10 Question #18	2.7	1
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1				1			EA1.10 Question #19	3.7	1
BW/A01 Plant Runback / 1									
BW/A04 Turbine Trip / 4									
000008 Pressurizer Vapor Space Accident / 3				1			AA1.02 Question #20	4.1	1
000009 Small Break LOCA / 3					1		EA2.06 Question #21	3.8	1
000011 Large Break LOCA / 3				1			EA1.03 Question #22	4.0	1
W/E04 LOCA Outside Containment / 3									
BW/E08; W/E03 LOCA Cooldown/Depress. / 4									
W/E11 Loss of Emergency Coolant Recirc. / 4									
W/EO1 & E02 Rediagnosis & SI Termination / 3									
000022 Loss of Reactor Coolant Makeup / 2	1						AK1.03 Question #23	3.0	1
000025 Loss of RHR System / 4				1			AA1.23 Question #24	2.8	1
000029 Anticipated Transient w/o Scram / 1		1					EK2.06 Question #25	2.9	1
000032 Loss of Source Range NI / 7			1				AK3.02 Question #26	3.7	1
000033 Loss of Intermediate Range NI / 7					1		AA2.01 Question #27	3.0	1
000037 Steam Generator Tube Leak / 3			1				AK3.05 Question #28	3.7	1
000038 Steam Generator Tube Rupture / 3						1	2.1.7 Question #29	3.7	1
000054 (CE/E06) Loss of Main Feedwater / 4									
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4									
000058 Loss of DC Power / 6					1		AA2.03 Question #30	3.5	1
000059 Accidental Liquid RadWaste Rel. / 9		1					AK2.01 Question #31	3.5	1
000060 Accidental Gaseous Radwaste Rel. / 9					1		AA2.05 Question #32	4.2	1
000061 ARM System Alarms / 7			1				AK3.02 Question #33	3.4	1
W/E16 High Containment Radiation / 9									
CE/E09 Functional Recovery									
K/A Category Point Totals:	2	2	3	4	4	2	Group Point Total:		17

ES-401	PWR RO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3							Form ES-401-4 (R8, S1)
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2				1			AA1.08 Question #34	3.7	1
000036 (BW/A08) Fuel Handling Accident / 8									
000056 Loss of Off-site Power / 6	1						AK1.01 Question #35	4.2	1
000065 Loss of Instrument Air / 8					1		AA2.05 Question #36	3.4	1
BW/E13&E14 EOP Rules and Enclosures									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
CE/A16 Excess RCS Leakage / 2									
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5									
K/A Category Point Totals:	1	0	0	1	1	0	Group Point Total:		3

ES-401	PWR RO Examination Outline Plant Systems - Tier 2/Group 1												Form ES-401-4 (R8, S1)	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive		1										K2.03 Question #37	2.7	1
003 Reactor Coolant Pump						1						K6.04 Question #39	2.8	1
004 Chemical and Volume Control				1								K4.13 Question #41	3.1	1
013 Engineered Safety Features Actuation			1									K3.01 Question #43	4.4	1
015 Nuclear Instrumentation					1							K5.05 Question #45	4.1	1
017 In-core Temperature Monitor									1			A3.01 Question #47	3.6	1
022 Containment Cooling										1		A4.05 Question #49	3.8	1
072 Area Radiation Monitoring										1		A4.01 Question #59	3.0	1
056 Condensate	1											K1.03 Question #50	2.6	1
059 Main Feedwater			1									K3.03 Question #51	3.5	1
061 Auxiliary/Emergency Feedwater				1								K4.02 Question #52	4.5	1
068 Liquid Radwaste					1							K5.04 Question #54	3.2	1
071 Waste Gas Disposal	1											K1.06 Question #56	3.1	1
072 Area Radiation Monitoring									1			A3.01 Question #58	2.9	1
001 Control Rod Drive											1	2.2.1 Question #38	3.7	1
003 Reactor Coolant Pump							1					A1.05 Question #40	3.4	1
004 Chemical and Volume Control											1	2.4.4 Question #42	4.3	1
013 Engineered Safety Features Actuation				1								K4.13 Question #44	3.7	1
015 Nuclear Instrumentation							1					A1.03 Question #46	3.7	1
017 In-core Temperature Monitor					1							K5.03 Question #48	3.7	1
061 Auxiliary/Emergency Feedwater								1				A2.04 Question #53	3.4	1
068 Liquid Radwaste				1								K4.01 Question #55	3.4	1
071 Waste Gas Disposal									1			A3.03 Question #57	3.6	1
K/A Category Point Totals:	2	1	2	4	3	1	2	1	3	2	2	Group Point Total:		23

ES-401	PWR RO Examination Outline Plant Systems - Tier 2/Group 2												Form ES-401-4 (R8, S1)	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant	1											K1.05 Question #60	3.2	1
006 Emergency Core Cooling		1										K2.04 Question #61	3.6	1
010 Pressurizer Pressure Control						1						K6.01 Question #62	2.7	1
011 Pressurizer Level Control					1							K5.10 Question #63	3.7	1
012 Reactor Protection				1								K4.02 Question #64	3.9	1
014 Rod Position Indication				1								K4.06 Question #65	3.4	1
016 Non-nuclear Instrumentation														
026 Containment Spray										1		A4.01 Question #67	4.5	1
029 Containment Purge									1			A3.01 Question #68	4.0	1
033 Spent Fuel Pool Cooling	1											K1.05 Question #69	2.7	1
035 Steam Generator								1				A2.01 Question #70	4.5	1
039 Main and Reheat Steam				1								K4.08 Question #71	3.3	1
055 Condenser Air Removal			1									K3.01 Question #72	2.5	1
062 AC Electrical Distribution								1				A2.11 Question #73	3.7	1
063 DC Electrical Distribution			1									K3.01 Question #74	3.7	1
064 Emergency Diesel Generator									1			A3.06 Question #75	3.3	1
073 Process Radiation Monitoring										1		A4.02 Question #76	3.7	1
075 Circulating Water	1											K1.08 Question #77	3.2	1
079 Station Air				1								K4.01 Question #78	2.9	1
086 Fire Protection										1		A4.05 Question #79	3.0	1
012 Reactor Protection						1						K6.07 Question #66	2.9	1
K/A Category Point Totals:	3	1	2	4	1	2	0	2	2	3	0	Group Point Total:		20

ES-401	PWR RO Examination Outline Plant Systems - Tier 2/Group 3	Form ES-401-4 (R8, S1)

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)		Imp.	Points
005 Residual Heat Removal															
007 Pressurizer Relief/Quench Tank	1											K1.03	Question #82	3.0	1
008 Component Cooling Water							1					A1.04	Question #80	3.1	1
027 Containment Iodine Removal															
028 Hydrogen Recombiner and Purge Control	1											K1.01	Question #81	2.5	1
034 Fuel Handling Equipment															
041 Steam Dump/Turbine Bypass Control										1		A4.08	Question #83	3.0	1
045 Main Turbine Generator				1								K4.11	Question #84	3.6	1
076 Service Water								1				A2.01	Question #85	3.5	1
078 Instrument Air									1			A3.01	Question #86	3.1	1
103 Containment			1									K3.02	Question #87	3.8	1
K/A Category Point Totals:	2	0	1	1	0	0	1	1	1	1	0	Group Point Total:			8

Plant-Specific Priorities

System / Topic	Recommended Replacement for...	Reason	Points

Plant-Specific Priority Total: (limit 10)	

Facility: ANO2		Date of Exam: 7/11/03		Exam Level: RO
Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.1	Conduct of operations requirements	3.7	1
	2.1.7	Evaluate characteristics, reactor behavior, and instrument interpretation	3.7	1
	2.1.20	Execute procedure steps	4.3	1
	2.1.23	System & integrated procedure (all modes)	3.9	1
	Total			4
Equipment Control	2.2.2	Manipulate console controls	4.0	1
	2.2.13	Tagging & clearance procedures	3.6	1
	2.2.22	LCO & safety limits	3.4	1
	Total			3
Radiation Control	2.3.1	10 CFR 20 & radiation control	2.6	1
	2.3.10	Reduce excessive radiation levels & exposure	2.9	1
	2.3.2	Knowledge of ALARA program	2.5	1
	Total			3
Emergency Procedures/ Plan	2.4.1	EOP entry & immediate actions	4.3	1
	2.4.34	Tasks outside control room (location & implications	3.8	1
	2.4.49	Immediate operation of systems & components	4.0	1
	Total			3
Tier 3 Point Total (RO)				13

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	A2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	3	2	5				2	9			3	24
	2	4	1	4				3	4			0	16
	3	1	0	0				1	1			0	3
	Tier Totals	8	3	9				6	14			3	43
2. Plant Systems	1	2	2	3	0	3	0	2	1	2	2	2	19
	2	4	1	1	3	1	2	0	2	1	2	0	17
	3	0	0	0	1	0	0	1	0	1	1	0	4
	Tier Totals	6	3	4	4	4	2	3	3	4	5	2	40

3. Generic Knowledge and Abilities	Cat 1	Cat 2	Cat 3	Cat 4	17
	4	4	4	5	

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).
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 exam must total 100 points.
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.
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 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.
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.

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1								Form ES-401-3 (R8, S1)
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1	1						AK1.03 Question #1	4.0	1
000003 Dropped Control Rod / 1						1	2.1.20 Question #2	4.2	1
000005 Inoperable/Stuck Control Rod / 1			1				AK3.01 Question #4	4.3	1
000011 Large Break LOCA / 3					1		AA2.10 Question #5	4.7	1
W/E04 LOCA Outside Containment / 3					1		EA2.1 Question #6	4.3	1
W/EO1 & E02 Rediagnosis & SI Termination / 3	1						EK1.2 Question #7	3.9	1
000015/17 RCP Malfunctions / 4			1				EK3.03 Question #8	4.0	1
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4					1		AA2.2 Question #9	3.8	1
000024 Emergency Boration / 1					1		AA2.02 Question #10	4.4	1
000026 Loss of Component Cooling Water / 8				1			AA1.03 Question #11	3.6	1
000029 Anticipated Transient w/o Scram / 1			1				EK3.12 Question #12	4.7	1
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4					1		AA2.03 Question #13	4.7	1
CE/A11; W/E08 RCS Overcooling - PTS / 4		1					AK2.2 Question #14	3.4	1
000051 Loss of Condenser Vacuum / 4					1		AA2.02 Question #15	4.1	1
000055 Station Blackout / 6			1				EK3.02 Question #16	4.6	1
000057 Loss of Vital AC Elec. Inst. Bus / 6					1		AA2.19 Question #17	4.3	1
000059 Accidental Liquid RadWaste Rel. / 9						1	2.4.7 Question #18	3.8	1
000062 Loss of Nuclear Service Water / 4						1	2.1.23 Question #19	4.0	1
000067 Plant Fire On-site / 9	1						AK1.02 Question #20	3.9	1
000068 (BW/A06) Control Room Evac. / 8				1			AA1.12 Question #21	4.4	1
000069 (W/E14) Loss of CTMT Integrity / 5					1		AA2.01 Question #22	4.3	1
000074 (W/E06&E07) Inad. Core Cooling / 4		1					EK2.03 Question #23	4.0	1
BW/E03 Inadequate Subcooling Margin / 4			1				EK3.11 Question #3	4.4	1
000076 High Reactor Coolant Activity / 9					1		AA2.02 Question #24	3.4	1
BW/A02&A03 Loss of NNI-X/Y / 7									
K/A Category Totals:	3	2	5	2	9	3	Group Point Total:		24

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 2							Form ES-401-3 (R8, S1)
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				1			EA1.10 Question #25	3.7	1
BW/A01 Plant Runback / 1									
BW/A04 Turbine Trip / 4									
000008 Pressurizer Vapor Space Accident / 3				1			AA1.02 Question #26	3.9	1
000009 Small Break LOCA / 3					1		EA2.06 Question #27	4.3	1
BW/E08; W/E03 LOCA Cooldown - Depress. / 4									
W/E11 Loss of Emergency Coolant Recirc. / 4									
000022 Loss of Reactor Coolant Makeup / 2	1						AK1.03 Question #28	3.4	1
000025 Loss of RHR System / 4				1			AA1.23 Question #29	2.9	1
000027 Pressurizer Pressure Control System Malfunction / 3			1				AK3.03 Question #30	4.1	1
000032 Loss of Source Range NI / 7			1				AK3.02 Question #31	4.1	1
000033 Loss of Intermediate Range NI / 7									
000037 Steam Generator Tube Leak / 3			1				AK3.05 Question #33	4.0	1
000038 Steam Generator Tube Rupture / 3		1					EK2.02 Question #34	2.5	1
000054 (CE/E06) Loss of Main Feedwater / 4	1						AK1.01 Question #35	4.3	1
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	1						EK1.3 Question #32	4.1	1
000058 Loss of DC Power / 6					1		AA2.03 Question #36	3.9	1
000060 Accidental Gaseous Radwaste Rel. / 9					1		AA2.05 Question #37	4.2	1
000061 ARM System Alarms / 7			1				AK3.02 Question #38	3.6	1
W/E16 High Containment Radiation / 9									
000065 Loss of Instrument Air / 8					1		AA2.05 Question #39	4.1	1
CE/E09 Functional Recovery	1						EK1.2 Question #40	4.0	1
K/A Category Point Totals:	4	1	4	3	4	0	Group Point Total:		16

ES-401	PWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 3							Form ES-401-3 (R8, S1)
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2				1			AA1.08 Question #41	3.6	1
000036 (BW/A08) Fuel Handling Accident / 8									
000056 Loss of Off-site Power / 6	1						AK1.01 Question #42	4.3	1
BW/E13&E14 EOP Rules and Enclosures									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
CE/A16 Excess RCS Leakage / 2					1		AA2.2 Question #43	3.7	1
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5									
K/A Category Point Totals:	1	0	0	1	1	0	Group Point Total:		3

ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 1												Form ES-401-3 (R8, S1)	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive		1										K2.03 Question #44	3.1	1
003 Reactor Coolant Pump							1					A1.05 Question #46	3.5	1
004 Chemical and Volume Control									1			A3.06 Question #47	3.9	1
013 Engineered Safety Features Actuation			1									K3.01 Question #48	4.7	1
014 Rod Position Indication			1									K3.02 Question #49	2.8	1
015 Nuclear Instrumentation					1							K5.05 Question #50	4.4	1
017 In-core Temperature Monitor					1							K5.03 Question #52	4.1	1
022 Containment Cooling										1		A4.05 Question #53	3.8	1
025 Ice Condenser														
026 Containment Spray	1											K1.02 Question #51	4.1	1
056 Condensate	1											K1.03 Question #55	2.6	1
059 Main Feedwater			1									K3.03 Question #56	3.7	1
061 Auxiliary/Emergency Feedwater											1	2.4.21 Question #57	4.3	1
063 DC Electrical Distribution		1										K2.1 Question #59	3.1	1
068 Liquid Radwaste					1							K5.04 Question #60	3.5	1
071 Waste Gas Disposal									1			A3.03 Question #61	3.8	1
072 Area Radiation Monitoring										1		A4.01 Question #62	3.3	1
001 Control Rod Drive											1	2.2.1 Question #45	3.6	1
022 Containment Cooling							1					A1.02 Question #54	3.8	1
061 Auxiliary/Emergency Feedwater								1				A2.04 Question #58	3.8	1
K/A Category Point Totals:	2	2	3	0	3	0	2	1	2	2	2	Group Point Total:		19

ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 2												Form ES-401-3 (R8, S1)	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant	1											K1.05 Question #63	3.4	1
006 Emergency Core Cooling		1										K2.04 Question #64	3.8	1
010 Pressurizer Pressure Control						1						K6.01 Question #65	3.1	1
011 Pressurizer Level Control					1							K5.10 Question #66	4.0	1
012 Reactor Protection				1								K4.02 Question #67	4.3	1
016 Non-nuclear Instrumentation														
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control	1											K1.01 Question #69	2.5	1
029 Containment Purge														
033 Spent Fuel Pool Cooling	1											K1.05 Question #70	2.8	1
034 Fuel Handling Equipment														
035 Steam Generator								1				A2.01 Question #71	4.6	1
039 Main and Reheat Steam				1								K4.07 Question #72	3.4	1
055 Condenser Air Removal			1									K3.01 Question #73	2.7	1
062 AC Electrical Distribution								1				A2.11 Question #74	4.1	1
064 Emergency Diesel Generator									1			A3.06 Question #75	3.4	1
073 Process Radiation Monitoring										1		A4.02 Question #76	3.7	1
075 Circulating Water	1											K1.08 Question #77	3.2	1
079 Station Air				1								K4.01 Question #78	3.2	1
086 Fire Protection										1		A4.05 Question #79	3.5	1
103 Containment														
						1						K6.07 Question #68	3.2	1
K/A Category Point Totals:	4	1	1	3	1	2	0	2	1	2	0	Group Point Total:		17

ES-401	PWR SRO Examination Outline Plant Systems - Tier 2/Group 3	Form ES-401-3 (R8, S1)

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)		Imp.	Points
005 Residual Heat Removal															
007 Pressurizer Relief/Quench Tank															
008 Component Cooling Water							1					A1.04	Question #80	3.2	1
041 Steam Dump/Turbine Bypass Control										1		A4.08	Question #81	3.1	1
045 Main Turbine Generator				1								K4.11	Question #82	3.9	1
076 Service Water															
078 Instrument Air									1			A3.01	Question #83	3.2	1
K/A Category Point Totals:	0	0	0	1	0	0	1	0	1	1	0	Group Point Total:			4

Plant-Specific Priorities

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

Facility: ANO2	Date of Exam: 7/11/03		Exam Level: SRO	
Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.1	Conduct of operations requirements	3.8	1
	2.1.7	Evaluate characteristics, reactor behavior, and instrument interpretation	4.4	1
	2.1.20	Execute procedure steps	4.2	1
	2.1.23	System & integrated procedure (all modes)	4.0	1
	Total			4
Equipment Control	2.2.2	Manipulate console controls	3.5	1
	2.2.13	Tagging & clearance procedures	3.8	1
	2.2.22	LCO & safety limits	4.1	1
	2.2.25	TS bases	3.7	1
	Total			4
Radiation Control	2.3.1	10 CFR 20 & radiation control	3.0	1
	2.3.9	Process for containment purge	3.4	1
	2.3.10	Reduce excessive radiation levels & exposure	3.3	1
	2.3.2	Knowledge of ALARA program	2.9	1
	Total			4
Emergency Procedures/ Plan	2.4.1	EOP entry & immediate actions	4.6	1
	2.4.6	EOP mitigation strategies	4.0	1
	2.4.29	Emergency plan	4.0	1
	2.4.34	Tasks outside control room (location & implications	3.6	1
	2.4.49	Immediate operation of systems & components	4.0	1
	Total			5
Tier 3 Point Total (SRO)				17

Tier / Group	Randomly Selected K/A	Reason for Rejection
1/2	000033AK1.01	Not applicable to plant with new NI's
1/3	000028AA101	Not applicable to plant with new modifications
2/1	004K1.04	Not applicable to plant