Facility: ANO-2 Date of Examination: April 24, 2000

Examination Level (circle one): RO / SRO Operating Test Number: 1

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct Of Operations 2.1.5	Ability to locate and use procedures and directives related to shift staffing and activities. New Admin JPM (ANO-2-JPM-NRC-STAFF02)
	Conduct Of Operations 2.1.19	Ability to use plant computer to obtain and evaluate parametric information on system or component status. New Admin (JPM ANO-2-JPM-NRC-PMS001)
A.2	Equipment Control **2.2.12**	**Knowledge of Surveillance Procedures** **New Admin JPM (ANO-2-JPM-NRC-CNMT1)**
A.3	Radiation Controls 2.3.11	Ability to control radiation releases. (Open Reference RO-A.3-1)
	Radiation Controls 2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized. (Open Reference RO-A.3-2)
A.4	Emergency Plan **2.4.39**	**Knowledge of the RO's responsibilities in emergency plan implementation.** (Open Reference RO-A.4-1)
	Emergency Plan **2.4.29**	**Knowledge of the Emergency Plan.** (Open Reference RO-A.4-2)

Facility: _ANO UNIT 2_____ Date of Examination: __4/24/2000__

Exam Level (circle one): ( ) / SRO(I) / SRO(U) Operating Test No.: _1__

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. ANO-2-JPM-NRC-AFW001 Feed steam generators with auxiliary feed water pump.	N/A/L/S	4 (Primary)
b. ANO-2-JPM-NRC-PZR02 Equalize RCS and PZR boron.	D/A/S	3
c. ANO-2-JPM-NRC-H2001 Hydrogen Recombiner startup.	D/S	5
d. ANO-2-JPM-NRC-CCP01 Swap lead Charging Pumps.	N/A/S	2
e. **ANO-2-JPM-NRC-CVCS2** **Perform Emerg Boration (Alternate Success Path).**	D/A/S	1
f. ANO-2-JPM-NRC-RCP02 Restore Component Cooling Water to RCPs.	D/A/L/S	4 (Secondary)
g. **ANO-2-JPM-NRC-CEA03** **Test Reactor Trip Circuit Breaker.**	**M**/S	7

B.2 Facility Walk-Through

a. **ANO-2-JPM-NRC-IA01** **Isolate IA to MSIVs (Locally).**	D	8
b. **ANO-2-JPM-NRC-AACOS** **Reset ACC DG after overspeed trip.**	D	6
c. ANO-2-JPM-NRC-LRWLR Commence liquid radwaste release.	D/R	9

* 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 Exam: **04/14/2000** Exam Level: **RO**

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	3	2	3				4	3			1	16/16
	2	2	2	5				1	6			1	17/17
	3	0	1	1				0	1			0	3/3
	Tier Totals	5	5	9				5	10			2	36/36
2. Plant Systems	1	3	1	3	5	3	1	1	2	2	2	0	23/23
	2	3	1	1	3	3	1	2	1	2	1	2	20/20
	3	0	1	0	1	0	0	1	2	1	1	1	8/8
	Tier Totals	6	3	4	9	6	2	4	5	5	4	3	51/51
3. Generic Knowledge and Abilities					Cat 1		Cat 2		Cat 3		Cat 4		13/13
					3		3		4		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. Actual point totals must match those specified in the table.
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 RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

ES-401 PWR RO Examination OutlineForm ES-401-4
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000005 Inoperable/Stuck Control Rod / 1									
000015/17 RCP Malfunctions / 4					1		015 AA2.08 – Ability to determine/interpret when to secure RCPs on high bearing temperature as per Reactor Coolant Pump Malfunctions. (QID 0142)	3.4	1.0
				1			017 AA1.21 - Ability to operate and/or monitor development of natural circulation. (QID 0085)	4.4	1.0
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4				1			A13 AA1.2 – Ability to operate and/or monitor operating behavior characteristics of the facility as they apply to Natural Circulation Operations. (QID 0268)	3.1	1.0
000024 Emergency Boration / 1					1		024 AA2.01 – Ability to determine and interpret whether boron flow and/or MOVs are malfunctioning from plant conditions as it applies to Emergency Boration. (QID 0231)	3.8	1.0
000026 Loss of Component Cooling Water / 8			1				026 AK3.03 – Knowledge of the reasons for guidance actions contained in EOPs for Loss of CCW. (QID 0228)	4.0	1.0
000027 Pressurizer Pressure Control System Malfunction / 3						1	027 2.4.2 – Knowledge of system setpoints, interlocks, and automatic actions associated with EOP entry conditions. (QID 0230)	3.9	1.0
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4	1						040 AK1.06 – Knowledge of the operational implications of high-energy break considerations. (QID 0032)	3.7	1.0
CE/A11; W/E08 RCS Overcooling - PTS / 4		1					A11 AK2.2 – Knowledge of the interrelations between RCS Overcooling and facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of facility. (QID 0229)	3.2	1.0
000051 Loss of Condenser Vacuum / 4					1		051 AA2.02 – Ability to determine and interpret conditions requiring reactor and/or turbine trip as they apply to Loss of Condenser Vacuum (QID 0080)	3.9	1.0
000055 Station Blackout / 6			1				055 EK3.02 – Knowledge of the reason for actions contained in EOP for Loss of Offsite and Onsite Power as they apply to Station Blackout EOP. (QID 0201)	4.3	1.0
000057 Loss of Vital AC Elec. Inst. Bus / 6				1			057 AA1.06 – Ability to operate and/or monitor manual control of components for which automatic control is lost as they apply to Loss of Vital AC Instrument Bus. (QID 266)	3.5	1.0
000062 Loss of Nuclear Service Water / 4				1			062 AA1.02 – Ability to operate and/or monitor loads on the SWS in the control room as they apply to Loss of Nuclear Service Water. (QID 0267)	3.2	1.0
000067 Plant Fire On-site / 9	1						067 K1.02 – Knowledge of the operational implications of fire fighting as they apply to Plant Fire on Site. (QID 0234)	3.1	1.0
000068 (BW/A06) Control Room Evac. / 8		1					068 K2.02 – Knowledge of the interrelations between the Control Room Evacuation and Reactor Trip System. (QID 0232)	3.7	1.0
000069 (W/E14) Loss of CTMT Integrity / 5									
000074 (W/E06&E07) Inad. Core Cooling / 4	1						074 EK1.02 – Knowledge of the operational implications and potential consequences of uncovering the core as they apply to Inadequate Core Cooling. (QID 0227)	4.6	1.0

ES-401 PWR RO Examination OutlineForm ES-401-4
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (Continued)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000076 High Reactor Coolant Activity / 9			1				076 AK3.06 – Knowledge of the actions contained in EOP for high reactor coolant activity. (QID 0226)	3.2	1.0
K/A Category Totals:	3	2	3	4	3	1	Group Point Total:		16/16

ES-401 PWR RO Examination OutlineForm ES-401-4
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1					1		001 AA2.05 – Ability to determine and interpret uncontrolled rod withdrawal, from available indications (QID 0163)	4.4	1.0
000003 Dropped Control Rod / 1	1						003 AK1.04 - Knowledge of the operational implications of the effects of power level and control position on flux as they apply to Dropped Control Rods (QID 0013)	3.1	1.0
			1				003 AK3.04 – Knowledge of the reasons for the action contained in AOP for Dropped Control Rod. (QID 0086)	3.8	1.0
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1	1						007 EK1.06 – Knowledge of the operational implications of the relationship of emergency feedwater flow to SG and decay heat removal following a Reactor Trip. (QID 0207)	3.7	1.0
000008 Pressurizer Vapor Space Accident / 3				1			008 AA1.02 – Ability to operate and/or monitor the HPSI Pump to control Pzr Level/Pressure with a pressurizer Vapor Space Accident. (QID 0247)	4.1	1.0
000009 Small Break LOCA / 3					1		009 EA2.33 – Ability to determine or interpret RCS water inventory balance and Tech Spec Limits as they apply to Small Break LOCA. (QID 0221)	3.3	1.0
000011 Large Break LOCA / 3					1		011 EA2.08 – Ability to determine or interpret conditions necessary for recovery when accident reaches stable phase as they apply to Large Break LOCA. (QID 0017)	3.4	1.0
000022 Loss of Reactor Coolant Makeup / 2			1				022 AK3.02 – Knowledge of the reasons for actions contained in SOPs and EOPs for RCPs, Loss of Makeup, Loss of Charging, and abnormal charging as they apply to the Loss of Reactor Coolant Makeup. (QID 0285)	3.5	1.0
000025 Loss of RHR System / 4			1				025 AK3.01 – Knowledge of the reasons for shifting to alternate flowpath as they apply to Loss of Residual Heat Removal System. (QID 0014)	3.1	1.0
000029 Anticipated Transient w/o Scram / 1		1					029 AK2.06 – Knowledge of the interrelations between breakers, relays, and disconnects and ATWS. (QID 0265)	2.9	1.0
000032 Loss of Source Range NI / 7		1					032 AK2.01 – Knowledge of the interrelations between the Loss of Source Range Nuclear Instrumentation and Power supplies, including proper switch positions. (QID 0271)	2.7	1.0
000033 Loss of Intermediate Range NI / 7									
000037 Steam Generator Tube Leak / 3					1		037 AA2.16 – Ability to determine and interpret pressure at which to maintain RCS during SG cooldown during a Steam Generator Tube Leak. (QID 0246)	4.1	1.0
000038 Steam Generator Tube Rupture / 3						1	038 2.4.48 – Ability to interpret control room indications to verify the status and operation of systems, and understand how operator actions and directives affect plant and system conditions. (QID 0264)	3.5	1.0
000054 (CE/E06) Loss of Main Feedwater / 4			1				E06 EK3.2 – Knowledge for the reasons for normal, abnormal and emergency operating procedures associated with Loss of Feedwater. (QID0082)	3.2	1.0
000058 Loss of DC Power / 6					1		058 AA2.03 – Ability to determine and interpret DC loads lost and impact on ability to operate and monitor plant systems as they apply to the Loss of DC Power. (QID 0225)	3.5	1.0
000059 Accidental Liquid RadWaste Rel. / 9			1				059 AK3.01 – Knowledge of the reasons for termination of a release of radioactive liquid as they apply to the Accidental Liquid Radwaste Release. (QID 0273)	3.5	1.0

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Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000060 Accidental Gaseous Radwaste Rel. / 9									
000061 ARM System Alarms / 7					1		061 AA2.01 – Ability to determine and interpret the ARM displays as they apply to the Area Radiation Monitoring System. (QID 0257)	3.5	1.0
CE/E09 Functional Recovery									
K/A Category Point Totals:	2	2	5	1	6	1	Group Point Total:		17/17

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Emergency and Abnormal Plant Evolutions - Tier 1/Group 3

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2			1				028 AK3.05 – Knowledge of reasons for actions contained in AOP for PZR level malfunctions. (QID 0083)	3.7	1.0
000036 (BW/A08) Fuel Handling Accident / 8					1		036 AA2.02 – Ability to determine and interpret occurrence of a fuel handling incident. (QID 0272)	3.4	1.0
000056 Loss of Off-site Power / 6									
000065 Loss of Instrument Air / 8									
CE/A16 Excess RCS Leakage / 2		1					A16 AK2.2 – Knowledge of the interrelations between Excess RCS Leakage and the facilities heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility. (QID 0199)	3.0	1.0
K/A Category Point Totals:	0	1	1	0	1	0	Group Point Total:		3 of 3

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Plant Systems - Tier 2/Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive				1								001 K4.03 – Knowledge of CRDS design feature(s) and/or interlock(s) which provide rod control logic. (QID 0119)	3.5	1.0
				1								001 K4.03 – Knowledge of CRDS design feature(s) and/or interlock(s), which provide for rod control logic. (QID 0009)	3.5	1.0
003 Reactor Coolant Pump			1									003 K3.02 – Knowledge of the effect that a loss or malfunction of RCPs will have on SGs. (QID 0280)	3.5	1.0
	1											003 K1.03 – Knowledge of the physical connections and/or cause effect relationship between the RCPs and the RCP Seal System. (QID 0057)	3.3	1.0
004 Chemical and Volume Control										1		004 A4.05 – Ability to manually operate and/or monitor in the control room the letdown pressure and temperature control valves. (QID 0112)	3.6	1.0
								1				004 A2.22 – Ability to (a) predict the impacts of mismatch of letdown and charging flows on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions. (QID 0208)	3.2	1.0
					1							004 K5.15 – Knowledge of the operational implications of boron and control rod reactivity effects as they apply to the CVCS. (QID 0211)	3.3	1.0
013 Engineered Safety Features Actuation			1									013 K3.01 – Knowledge of the effect that a loss or malfunction of the ESFAS will have on the fuel. (QID 0248)	4.4	1.0
				1								013 K4.10 – Knowledge of ESFAS design feature(s) and/or Interlock(s) which provide for safeguards equipment control reset. (QID 0274)	3.3	1.0
					1							013 K5.02 – Knowledge of the operational implications of safety system logic and reliability as they apply to the ESFAS. (QID 0258)	2.9	1.0
								1				013 A2.06 – Ability to (a) predict the impacts of inadvertent ESFAS actuation on the ESFAS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of Inadvertent ESFAS actuation. (QID 0249)	3.7	1.0

ES-401 PWR RO Examination OutlineForm ES-401-4
Plant Systems - Tier 2/Group 1 (continued)

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
015 Nuclear Instrumentation				1								015 K4.06 – Knowledge of Nuclear Instrumentation System design feature(s) and/or interlocks(s) which provide for Reactor Trip Bypasses. (QID 0108)	3.9	1.0
					1							015 K5.10 – Knowledge of the operational implications of the following concepts as they apply to the Nuclear Instrumentation System (NIS) and Detector Operation. (QID 0126	2.9	1.0
				1								015 K4.10 – Knowledge of NIS design feature(s) and/or interlock(s) providing for redundant sources of information on power level. (QID 0200)	3.2	1.0
017 In-core Temperature Monitor							1					017 A1.01 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ITM system controls including core exit temperatures. (QID 0263)	3.7	1.0
022 Containment Cooling		1										022 K2.01 – Knowledge of power supplies to Containment Cooling Fans. (QID 0281)	3.0	1.0
										1		022 A4.03 – Ability to manually operate and/or monitor dampers in the Containment Cooling System. (QID 0256)	3.2	1.0
025 Ice Condenser														
056 Condensate	1											056 K1.03 – Knowledge of the physical connections and/or cause-effect relationships between the Condensate System and the Main Feedwater System. (QID 0260)	2.6	1.0
059 Main Feedwater			1									059 K3.03 – Knowledge of the effect that a loss or malfunction of the MFW will have on SGs. (QID 0251)	3.5	1.0
									1			059 A3.02 – Ability to monitor automatic operation of the MFW, including programmed levels in the SGs. (QID 0254)	2.9	1.0
061 Auxiliary/Emergency Feedwater									1			061 A3.03 - Ability to monitor automatic operation of EFW including EFW SG level control on automatic start. (QID 0068)	3.9	1.0
068 Liquid Radwaste						1						068 K6.10 – Knowledge of the effect of a loss or malfunction of radiation monitor will have on the Liquid Radwaste System. (QID 0250)	2.5	1.0
071 Waste Gas Disposal														

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Plant Systems - Tier 2/Group 1 (Continued)

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
072 Area Radiation Monitoring	1											072 K1.04 – Knowledge of the physical connections and/or cause-effect relationships between the ARM system and Control Room Ventilation System. (QID 0270)	3.3	1.0
K/A Category Point Totals:	3	1	3	5	3	1	1	2	2	2		Group Point Total:		23 of 23

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Plant Systems - Tier 2/Group 2

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant					1							002 K5.09 – Knowledge of the operational implications of the relationship of pressure and temperature for water saturation and subcooling conditions as they apply to the RCS. (QID 0196)	3.7	1.0
											1	002 2.1.7 – Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation. (QID 0217)	3.7	1.0
						1						002 K6.02 – Knowledge of the effect of an RCP start on RCS components. (QID 0210)	3.6	1.0
006 Emergency Core Cooling		1										006 K2.04 – Knowledge of bus power supplies to ESFAS operated valves. (QID 0283)	3.6	1.0
									1			006 A3.08 – Ability to monitor automatic operation of the ECCS, including automatic transfer of ECCS flowpaths. (QID 0278)	4.2	1.0
010 Pressurizer Pressure Control	1											010 K1.08 – Knowledge of the physical connections and/or cause-effect relationships between the Pressurizer Pressure Control System and the Pressurizer Level Control System. (QID 0100)	3.2	1.0
										1		010 A4.02 – Ability to manually operate and/or monitor pressurizer heaters in the Control Room. (QID 0212)	3.6	1.0
011 Pressurizer Level Control	1											011K1.05 - Knowledge of the physical connections and/or cause effect relationships between the Pressurizer Level Control System and the Reactor Regulating System. (QID 0051)	3.4	1.0
012 Reactor Protection								1				012 A2.05 – Ability to (a) predict the impacts of faulty or erratic operation of detectors and function generators on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations. (QID 0198)	3.1	1.0
014 Rod Position Indication				1								014 K4.06 – Knowledge of RPIS design feature(s) and/or interlock(s), which provide for individual and group misalignment. (QID 0218)	3.4	1.0
016 Non-nuclear Instrumentation											1	016 2.4.48 – Ability to interpret control room indications to verify the status of operation of system, and understand how operator actions and directives affect plant and system conditions. (QID 0209)	3.5	1.0

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Plant Systems - Tier 2/Group 2 (Continued)

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
026 Containment Spray									1			026 A3.01 – Ability to monitor automatic operation of CSS, including pump starts and correct MOV positioning. (QID 0279)	4.3	1.0
029 Containment Purge	1											029 K1.03 – Knowledge of the physical and/or cause-effect relationship between the Containment Purge System and Engineered Safeguards. (QID 0219)	3.6	1.0
033 Spent Fuel Pool Cooling				1								033 K4.05 – Knowledge of design feature(s) and/or interlocks which provide for adequate SDM (boron concentration). (QID 0275)	3.1	1.0
035 Steam Generator														
039 Main and Reheat Steam					1							039 K5.08 – Knowledge of the operational implications and effects of steam removal on reactivity as it applies to the Main and Reheat Steam Systems. (QID 0220)	3.6	1.0
055 Condenser Air Removal														
062 AC Electrical Distribution							1					062 A1.01 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the AC Distribution System control including significance of DG load limits. (QID 0276)	3.4	1.0
063 DC Electrical Distribution			1									063 K3.02 – Knowledge of the effect that a loss or malfunction of the DC electrical system will have on components using DC control power. (QID 0222)	3.5	1.0
064 Emergency Diesel Generator				1								064 K4.02 – Knowledge of EDG system design feature(s) and/or interlock(s) which provide trips of EDG while operating (normal or emergency). (QID 0214)	3.9	1.0
073 Process Radiation Monitoring							1					073 A1.01 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRM System controls including radiation levels. (QID 0277)	3.2	1.0
075 Circulating Water														
079 Station Air														
086 Fire Protection					1							086 K5.03 – Knowledge of the operational implication of the effect of water spray on electrical components as they apply to the Fire Protection System (QID 0215).	3.1	1.0
K/A Category Point Totals:	3	1	1	3	3	1	2	1	2	1	2	Group Point Total:		20 of 20

ES-401 PWR RO Examination OutlineForm ES-401-4
Plant Systems - Tier 2/Group 3

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal		1										005 K2.01 – Knowledge of bus power supplies to the SDC pumps. (QID 0206)	3.0	1.0
007 Pressurizer Relief/Quench Tank								1				007 A2.01 – Ability to (a) predict the impacts of a stuck-open PORV or code safety on the Quench Tank System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations. (QID 0195).	3.9	1.0
008 Component Cooling Water											1	008 2.1.7 – Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretations. (QID 0255)	3.7	1.0
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control								1				028 A2.02 – Ability to (a) predict the impacts of LOCA conditions and related concerns over hydrogen on the HRPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations. (QID 0204)	3.5	1.0
034 Fuel Handling Equipment									1			034 A3.02 – Ability to monitor automatic operation of the Fuel Handling System including travel limits. (QID 0253)	2.5	1.0
041 Steam Dump/Turbine Bypass Control				1								041 K4.17 - Knowledge of SDS design feature(s) and/or interlock(s) related to a reactor trip. (QID 0088)	3.7	1.0
045 Main Turbine Generator							1					045 A1.05 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MT/G system controls including expected response of primary plant parameters (temperature and pressure) following a T/G trip. (QID 0261).	3.8	1.0
076 Service Water														
078 Instrument Air										1		078 A4.01 – Ability to manually operate and/or monitor pressure gages in the control room. (QID 0262)	3.1	1.0
103 Containment														
K/A Category Point Totals:	0	1	0	1	0	0	1	2	1	1	1	Group Point Total:		8 of 8

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

Facility: **ANO Unit 2** Date of Exam: **04/14/2000** Exam Level: **RO**

Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements. (QID 0233)	3.7	1.0
	2.1.21	Ability to obtain and verify controlled procedure copy. (QID 0120)	3.1	1.0
	2.1.29	Knowledge of how to conduct and verify valve lineups.(QID 0122)	3.4	1.0
	Total			3.0
Equipment Control	2.2.1	Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity. (QID 0241)	3.7	1.0
	2.2.12	Knowledge of surveillance procedures. (QID 0242)	3.0	1.0
	2.2.30	Knowledge of RO duties in the control room during fuel handling such as alarms for fuel handling area, communications with fuel storage facility, systems operated from the control room in support of fuel handling operations and supporting instrumentation. (QID 0235)	3.5	1.0
	Total			3.0
Radiation Control	2.3.2	Knowledge of facility ALARA program. (QID 0239)	2.5	1.0
	2.3.9	Knowledge of the process for performing a containment purge. (QID0240)	2.5	1.0
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure. (QID 0238)	2.9	1.0
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure. (QID 0236)	2.9	1.0
	Total			4.0
Emergency Procedures/ Plan	2.4.4	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency or abnormal operating procedures. (QID 0223)	4.0	1.0
	2.4.26	Knowledge of Facility protection requirements including fire brigade and portable fire fighting equipment usage. (QID 0008)	3.5	1.0
	2.4.48	Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. (QID 0237)	3.5	1.0
	Total			3.0
Tier 3 Point Total (RO)				13/13

Facility: ANO-2 Date of Examination: April 24, 2000

Examination Level (circle one): RO / (SRO) Operating Test Number: 1

Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	Conduct of Operations 2.1.5	Ability to locate and use procedures and directives related to shift staffing and activities. New Admin JPM (ANO-2-JPM-NRC-STAFF01)
	Conduct of Operations **2.1.16**	**Ability to operate plant phone, paging system and two-way radio.** **New Admin JPM (ANO-2-JPM-NRC-PEREMG)**
A.2	Equipment Control **2.2.12**	**Knowledge of Surveillance Procedures.** **New Admin JPM (ANO-2-JPM-NRC-SURVREVW)**
A.3	Radiation Control 2.3.11	Ability to control radiation releases. **New Open Reference Question (A3-1)**
	Radiation Control 2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.
A.4	Emergency Plan **2.4.44**	**Knowledge of the Emergency Plan Protective Action Requirements**. **New Admin JPM (ANO-2-JPM-NRC-EPLAN1)**

Facility: _ANO UNIT 2_____ Date of Examination: __4/24/2000_

Exam Level (circle one): RO / SRO(I) / (SRO(U)) Operating Test No.: _1__

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. ANO-2-JPM-NRC-AFW001 Feed steam generators with auxiliary feed water pump.	N/A/L/S	4 (Primary)
b. ANO-2-JPM-NRC-CCP01 Swap lead Charging Pumps.	N/A/S	2
c. **ANO-2-JPM-NRC-CEA03** **Test Reactor Trip Circuit Breaker.**	**M**/S	7

B.2 Facility Walk-Through

a. **ANO-2-JPM-NRC-AACOS** **Reset ACC DG after overspeed trip.**	D	6
b. ANO-2-JPM-NRC-LRWLR Commence liquid radwaste release.	D/R	9

* 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 Exam: **04/21/2000** Exam Level: **SRO**

Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	5	3	6				4	5			1	24/24
	2	2	1	4				2	5			2	16/16
	3	0	1	0				1	1			0	3/3
	Tier Totals	7	5	10				7	11			3	43/43
2. Plant Systems	1	2	0	3	3	1	1	2	2	3	2	0	19/19
	2	3	1	1	2	2	1	0	3	1	1	2	17/17
	3	0	1	0	0	0	0	1	1	0	0	1	4/4
	Tier Totals	5	2	4	5	3	2	3	6	4	3	3	40/40
3. Generic Knowledge and Abilities		Cat 1			Cat 2			Cat 3			Cat 4		17/17
		4			4			5			4		

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. Actual point totals must match those specified in the table.
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 RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

ES-401 PWR SRO Examination OutlineForm ES-401-3
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000001 Continuous Rod Withdrawal / 1					1		001 AA2.05 – Ability to determine and interpret uncontrolled rod withdrawal, from available indications. (QID 0163)	4.6	1.0
000003 Dropped Control Rod / 1	1						003 AK1.04 – Knowledge of the operational implication of the effects of power level and control position on flux as they apply to Dropped Control Rods. (QID 0013)	3.7	1.0
			1				003 AK3.04 – Knowledge of the reasons for the actions contained in AOP for Dropped Control Rod. (QID 0086)	4.1	1.0
000005 Inoperable/Stuck Control Rod / 1	1						005 AK1.06 – Knowledge of the operational implications and bases for power limit, for rod misalignment. (QID 0305)	3.8	1.0
000011 Large Break LOCA / 3					1		011 EA2.08 – Ability to determine or interpret conditions necessary for recovery when accident reaches stable phase as they apply to Large Break LOCA. (QID 0017)	3.9	1.0
000015/17 RCP Malfunctions / 4					1		015 AA2.08 – Ability to determine/interpret when to secure RCPs on high bearing temperature as per Reactor Coolant Pump Malfunctions. (QID 0142).	3.5	1.0
				1			017 AA1.21 – Ability to operate and/or monitor development of natural circulation. (QID 0085)	4.5	1.0
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4				1			A13 AA1.2 – Ability to operate and/or monitor operating behavior characteristics of the facility as they apply to Natural Circulation Operations. (QID 0268)	3.6	1.0
000024 Emergency Boration / 1			1				024 K3.02 – Knowledge of the reasons for actions contained in EOP as they apply to Emergency Boration. (QID 0202)	4.4	1.0
					1		024 AA2.01 – Ability to determine and interpret whether boron flow and/or MOVs are malfunctioning from plant conditions as it applies to Emergency Boration. (QID 0231)	4.1	1.0
000026 Loss of Component Cooling Water / 8						1	026 2.4.24 – Knowledge of Loss of Cooling Water procedures. (QID 0299)	3.7	1.0
			1				026 AK3.03 – Knowledge of the reasons for guidance actions contained in EOPs for Loss of CCW. (QID 0228)	4.2	1.0
000029 Anticipated Transient w/o Scram / 1		1					029 AK2.06 – Knowledge of the interrelations between breakers, relays, and disconnects and ATWS. (QID 0265)	3.1	1.0
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4	1						040 AK1.06 – Knowledge of the operational implications of high-energy steam break considerations. (QID 0032)	3.8	1.0
CE/A11; W/E08 RCS Overcooling - PTS / 4		1					A11 AK2.2 – Knowledge of the interrelations between RCS Overcooling and facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility. (QID 0229)	3.4	1.0
000051 Loss of Condenser Vacuum / 4					1		051 AA2.02 – Ability to determine and interpret conditions requiring reactor and/or turbine trip as they apply to Loss of Condenser Vacuum. (QID 0080)	4.1	1.0
000055 Station Blackout / 6			1				055 EK3.02 – Knowledge of the reason for actions contained in EOP for Loss of Offsite and Onsite power as they apply to Station Blackout EOP. (QID 0201)	4.6	1.0
000057 Loss of Vital AC Elec. Inst. Bus / 6				1			057 AA1.06 – Ability to operate and/or monitor manual control of components for which automatic control is lost as they apply to Loss of Vital AC Instrument Bus. (QID 266)	3.5	1.0

ES-401 PWR SRO Examination OutlineForm ES-401-3
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (Continued)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000059 Accidental Liquid RadWaste Rel. / 9			1				059 AK3.01 – Knowledge of the reasons for termination of a release of radioactive liquid as they apply to the Accidental Liquid Radwaste Release. (QID 0273)	3.9	1.0
000062 Loss of Nuclear Service Water / 4				1			062 AA1.02 – Ability to operate and/or monitor loads on the SWS in the control room as they apply to Loss of Nuclear Service Water. (QID 0267)	3.3	1.0
000067 Plant Fire On-site / 9	1						067 K1.02 – Knowledge of the operational implications of fire fighting as they apply to Plant Fire on Site. (QID 0234)	3.9	1.0
000068 (BW/A06) Control Room Evac. / 8		1					068 K2.02 – Knowledge of the interrelations between the Control Room Evacuation and Reactor trip system. (QID 0232)	3.9	1.0
000069 (W/E14) Loss of CTMT Integrity / 5									
000074 (W/E06&E07) Inad. Core Cooling / 4	1						074 EK1.02 – Knowledge of the operational implications and potential consequences of uncovering the core as they apply to Inadequate Core Cooling. (QID 0227)	4.8	1.0
000076 High Reactor Coolant Activity / 9			1				076 AK3.06 – Knowledge of the actions contained in EOP for high reactor coolant activity. (QID 0226)	3.8	1.0
K/A Category Totals:	5	3	6	4	5	1	Group Point Total:		24/24

ES-401 PWR SRO Examination OutlineForm ES-401-3
Emergency and A bnormal Plant Evolutions - Tier 1/Group 2

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1					1		E02 EA2.1 – Ability to determine and interpret facility conditions and selection of appropriate procedures during abnormal and emergency operations (Reactor Trip Recovery). (QID 0132)	3.7	1.0
	1						007 EK1.06 – Knowledge of the operational implications of the relationship of emergency feedwater flow to SG and decay heat removal following a Reactor Trip (QID 0207)	4.1	1.0
000008 Pressurizer Vapor Space Accident / 3				1			008 AA1.02 – Ability to operate and/or monitor the HPSI Pump to control Pzr level/pressure with a Pressurizer Vapor Space Accident. (QID 0247)	3.9	1.0
000009 Small Break LOCA / 3				1			009 EA1.16 – Ability to operate and/or monitor subcooling margin monitors as they apply to small break LOCA. (QID 0286)	4.2	1.0
000022 Loss of Reactor Coolant Makeup / 2			1				022 AK3.02 – Knowledge of the reasons for actions contained in SOPs and EOPs for RCPs, Loss of Makeup, Loss of Charging, and abnormal charging as they apply to the Loss of Reactor Coolant Makeup. (QID 0285)	3.8	1.0
000025 Loss of RHR System / 4			1				025 AK3.01 – Knowledge of the reasons for shifting to alternate flowpath as they apply to Loss of Residual Heat Removal System. (QID 0014)	3.4	1.0
000027 Pressurizer Pressure Control System Malfunction / 3						1	027 2.4.2 – Knowledge of system setpoints, interlocks, and automatic actions associated with EOP entry conditions. (QID 0230)	4.1	1.0
000032 Loss of Source Range NI / 7		1					032 AK2.01 – Knowledge of the interrelations between the Loss of Source Range Nuclear Instrumentation and Power supplies, including proper switch positions. (QID 0271)	3.1	1.0
000033 Loss of Intermediate Range NI / 7									
000037 Steam Generator Tube Leak / 3					1		037 AA2.16 – Ability to determine and interpret pressure at which to maintain RCS during SG cooldown during a Steam Generator Tube Leak. (QID 0246)	4.3	1.0
000038 Steam Generator Tube Rupture / 3					1		038 EA2.02 – Ability to determine or interpret existence of a SG tube rupture and its potential consequences as they apply to SGTR. (QID 0224)	4.8	1.0
						1	038 2.4.48 – Ability to interpret control room indications to verify the status and operation of systems, and understand how operator actions and directives affect plant and system conditions. (QID 0264)	3.8	1.0
000054 (CE/E06) Loss of Main Feedwater / 4			1				E06 EK3.2 – Knowledge for the reasons for normal, abnormal and emergency operating procedures associated with Loss of Feedwater. (QID 0082)	3.7	1.0
000058 Loss of DC Power / 6					1		058 AA2.03 – Ability to determine and interpret DC loads lost and impact on ability to operate and monitor plant systems as they apply to the Loss of DC Power. (QID 0225)	3.9	1.0
000060 Accidental Gaseous Radwaste Rel. / 9									
000061 ARM System Alarms / 7					1		061 AA2.01 – Ability to determine and interpret the ARM displays as they apply to the Area Radiation Monitoring System. (QID 0257)	3.7	1.0
000065 Loss of Instrument Air / 8			1				065 AK3.08 – Knowledge of the reasons for action contained in AOP for Loss of Instrument Air. (QID 0203)	3.9	1.0

ES-401 PWR SRO Examination OutlineForm ES-401-3
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (Continued)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
CE/E09 Functional Recovery	1						E09 EK1.2 – Knowledge of the operational implications of normal, abnormal and emergency operating procedure associated with Functional Recovery. (QID 0284)	4.0	1.0
K/A Category Point Totals:	2	1	4	2	5	2	Group Point Total:		16/16

ES-401 PWR SRO Examination OutlineForm ES-401-3
Emergency and Abnormal Plant Evolutions - Tier 1/Group 3

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	Imp.	Points
000028 Pressurizer Level Malfunction / 2									
000036 (BW/A08) Fuel Handling Accident / 8				1			036 AA1.04 – Ability to operate and/or monitor fuel handling equipment during a fuel handling incident. (QID 0290)	3.7	1.0
000056 Loss of Off-site Power / 6					1		056 AA2.88 – Ability to determine and interpret the following as they apply to a Loss of Offsite Power: SG water level for natural circulation. (QID 0303)	4.2	1.0
CE/A16 Excess RCS Leakage / 2		1					A16 AK2.2 – Knowledge of the interrelationship between the Excess RCS Leakage and the facilities heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility. (QID 0199)	3.3	1.0
K/A Category Point Totals:	0	1	0	1	1	0	Group Point Total:		3/3

ES-401 PWR SRO Examination OutlineForm ES-401-3
Plant Systems - Tier 2/Group 1

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
001 Control Rod Drive				1								001 K4.13 – Knowledge of CRDS design feature(s) and/or interlock(s), which provide for operation of CRDS controls for withdrawing lingering rods and transferring rods and rod groups. (QID 0304)	3.4	1.0
003 Reactor Coolant Pump									1			003 A3.05 – Ability to monitor automatic operation of the RCPs including RCP Lube Oil and Bearing Lift Pumps. (QID 0058)	2.6	1.0
004 Chemical and Volume Control										1		004 A4.05 – Ability to manually operate and/or monitor from the control room the Letdown pressure and temperature control valves. (QID 0112)	3.1	1.0
013 Engineered Safety Features Actuation			1									013 K3.01 – Knowledge of the effect that a loss or malfunction of the ESFAS will have on the fuel. (QID 0248)	4.7	1.0
					1							013 K5.02 – Knowledge of the operational implications of safety system logic and reliability as they apply to the ESFAS. (QID 0258)	3.3	1.0
								1				013 A2.06 – Ability to (a) predict the impacts of inadvertent ESFAS actuation on the ESFAS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of Inadvertent ESFAS actuation. (QID 0249)	4.0	1.0
014 Rod Position Indication				1								014 K4.06 – Knowledge of RPIS design feature(s) and/or interlock(s), which provide for individual and group misalignment. (QID 0218)	3.7	1.0
015 Nuclear Instrumentation				1								015 K4.06 – Knowledge of Nuclear Instrumentation System design feature(s) and/or interlock(s), which provide for Reactor Trip Bypasses. (QID 0108)	4.2	1.0
							1					015 A1.01 – Ability to predict/monitor changes in parameters (to prevent exceeding design limits) associated with operating the Nuclear Instrumentation System (NIS) controls including NIS calibration by heat balance. (QID 0147)	3.8	1.0

ES-401 PWR SRO Examination OutlineForm ES-401-3
Plant Systems - Tier 2/Group 1 (Continued)

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
017 In-core Temperature Monitor							1					017 A1.01 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ITM system controls including core exit temperatures. (QID 0263)	3.9	1.0
022 Containment Cooling										1		022 A4.03 – Ability to manually operate and/or monitor dampers in the Containment Cooling System. (QID 0256)	3.2	1.0
025 Ice Condenser														
026 Containment Spray								1				026 A2.04 - Ability to predict the impacts of the failure of a spray pump on the CSS. (QID 0293)	4.2	1.0
056 Condensate	1											056 K1.03 – Knowledge of the physical connections and/or cause-effect relationships between the Condensate System and the Main Feedwater System. (QID 0260)	2.6	1.0
059 Main Feedwater			1									059 K3.03 – Knowledge of the effect that a loss or malfunction of the MFW will have on SGs. (QID 0251)	3.7	1.0
									1			059 A3.02 – Ability to monitor automatic operation of the MFW, including programmed levels in the SGs. (QID 0254)	3.1	1.0
061 Auxiliary/Emergency Feedwater									1			061 A3.03 – Ability to monitor Automatic operation of EFW including EFW SG level control on automatic start. (QID 0068).	3.9	1.0
063 DC Electrical Distribution			1									063 K3.02 – Knowledge of the effect that a loss or malfunction of the DC electrical system will have on components us DC control power. (QID 0222)	3.7	1.0
068 Liquid Radwaste						1						068 K6.10 – Knowledge of the effect of a loss or malfunction of radiation monitor will have on the Liquid Radwaste System. (QID 0250)	2.9	1.0
071 Waste Gas Disposal														
072 Area Radiation Monitoring	1											072 K1.04 – Knowledge of the physical connections and/or cause-effect relationships between the ARM system and Control Room Ventilation System. (QID 0270)	3.5	1.0
K/A Category Point Totals:	2	0	3	3	1	1	2	2	3	2	0	Group Point Total:		19/19

ES-401 PWR SRO Examination OutlineForm ES-401-3
Plant Systems - Tier 2/Group 2

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
002 Reactor Coolant											1	002 2.1.7 – Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation. (QID 0217)	4.4	1.0
						1						002 K6.02 – Knowledge of the effect of an RCP start on RCS components. (QID 0301)	3.8	1.0
006 Emergency Core Cooling		1										006 K2.04 – Knowledge of bus power supplies to ESFAS operated valves. (QID 0283)	3.8	1.0
010 Pressurizer Pressure Control	1											010 K1.08 – Knowledge of the physical connections and/or cause-effect relationships between the Pressurizer Pressure Control System and the Pressurizer Level Control System. (QID 0100)	3.5	1.0
										1		010 A4.02 – Ability to manually operate and/or monitor in the control room Pzr heaters. (QID 0212)	3.4	1.0
011 Pressurizer Level Control				1								011 K4.06 – Knowledge of PZR LCS design feature(s) and/or interlocks which provide for Letdown Isolation. (QID 0291)	3.7	1.0
012 Reactor Protection								1				012 A2.05 - Ability to (a) predict the impacts of faulty or erratic operation of detectors and function generators on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations. (QID 0198)	3.2	1.0
016 Non-nuclear Instrumentation											1	016 2.4.48 – Ability to interpret control room indications to verify the status of operation of system, and understand how operator actions and directives affect plant and system operation. (QID 0209)	3.8	1.0
027 Containment Iodine Removal														

ES-401 PWR SRO Examination OutlineForm ES-401-3
Plant Systems - Tier 2/Group 2 (Continued)

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
028 Hydrogen Recombiner and Purge Control								1				028 A2.02 – Ability to (a) predict the impacts of the following malfunctions or operations on the HPRS; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those malfunctions or operations: LOCA condition and related concern over hydrogen. (QID 0204)	3.9	1.0
029 Containment Purge	1											029 K1.03 – Knowledge of the physical connections and/or cause-effect relationship between the Containment Purge System and Engineered Safeguards. (QID 0219).	3.8	1.0
033 Spent Fuel Pool Cooling								1				033 A2.03 – Ability to (a) predict the impacts of abnormal level or loss of water level on the Spent Fuel Cooling System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations. (QID 0300)	3.5	1.0
034 Fuel Handling Equipment									1			034 A3.02 – Ability to monitor automatic operation of the Fuel Handling System including travel limits. (QID 0253)	3.1	1.0
035 Steam Generator			1									035 K3.01 – Knowledge of the effect that a loss or malfunction of the SGs will have on the RCS. (QID 0282)	4.6	1.0
039 Main and Reheat Steam					1							039 K5.08 – Knowledge of the operational implications and effects of steam removal on reactivity as it applies to the Main and Reheat Steam System. (QID 0220)	3.6	1.0
055 Condenser Air Removal														
062 AC Electrical Distribution	1											062 K1.02 – Knowledge of the physical connections and/or cause-effect relationships between the AC Distribution System and the ED/G. (QID 0292)	4.4	1.0
064 Emergency Diesel Generator				1								064 K4.02 – Knowledge of EDG system design feature(s) and/or interlock(s) which provide trips for EDG while operating (normal or emergency). (QID 0214)	4.2	1.0
073 Process Radiation Monitoring														
075 Circulating Water														
079 Station Air														

ES-401 PWR SRO Examination OutlineForm ES-401-3
Plant Systems - Tier 2/Group 2 (Continued)

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G	K/A Topic(s)	Imp.	Points
086 Fire Protection					1							086 K5.03 – Knowledge of the operational implication of the effects of water spray on electrical components as they apply to the Fire Protection System. (QID 0215)	3.4	1.0
103 Containment														
K/A Category Point Totals:	3	1	1	2	2	1	0	3	1	1	2	Group Point Total:		17/17

ES-401 PWR SRO Examination OutlineForm ES-401-3
Plant Systems - Tier 2/Group 3

System # / Name	K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A4	G	K/A Topic(s)	Imp.	Points
005 Residual Heat Removal		1										005 K2.01 – Knowledge of bus power supplies to the SDC Pumps. (QID 0206)	3.2	1.0
007 Pressurizer Relief/Quench Tank								1				007 A2.01 – Ability to (a) predict the impacts of a stuck-open PORV or code safety on the PRT/QT; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of this malfunction. (QID 0195)	4.2	1.0
008 Component Cooling Water											1	008 2.1.7 – Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretations. (QID 0255)	4.4	1.0
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator							1					045 A1.05 – Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MT/G system controls including expected response of primary plant parameters (temperature and pressure) following a T/G trip. (QID 0261).	4.1	1.0
076 Service Water														
078 Instrument Air														
K/A Category Point Totals:	0	1	0	0	0	0	1	1	0	0	1	Group Point Total:		4/4

Plant-Specific Priorities

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

Facility: **ANO Unit 2** Date of Exam: **04/21/00** Exam Level: **SRO**

Category	K/A #	Topic	Imp.	Points
Conduct of Operations	2.1.1	Knowledge of conduct of operations requirements. (QID 0233)	3.8	1.0
	2.1.17	Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. (QID 0252)	4.4	1.0
	2.1.33	Ability to recognize indications for system operating parameters which are entry conditions for Technical Specifications. (QID 0295)	4.0	1.0
	2.1.32	Ability to explain and apply all system limits and precautions. (QID 0245)	3.8	1.0
	Total			4.0
Equipment Control	2.2.11	Knowledge of the process for controlling temporary changes. (QID 0269)	3.4	1.0
	2.2.12	Knowledge of surveillance procedures. (QID 0242)	3.4	1.0
	2.2.25	Knowledge of bases in Technical Specifications for limiting conditions for operations and Safety Limits. (QID 0302)	3.7	1.0
	2.2.30	Knowledge of RO duties in the control room during fuel handling such as alarms for fuel handling area, communications with fuel storage facility, systems operated from the control room in support of fueling operations and supporting instrumentation. (QID 0235)	3.3	1.0
	Total			4.0
Radiation Control	2.3.1	Knowledge of 10CFR20 and related facility radiation control requirements. (QID 0296)	3.0	1.0
	2.3.7	Knowledge of the process for preparing a radiation work permit. (QID 0145)	3.3	1.0
	2.3.9	Knowledge of the process for performing a containment purge. (QID 0240)	3.4	1.0
	2.3.4	Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized. (QID 0297)	3.0	1.0
	2.3.10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure. (QID 0238)	3.3	1.0
	Total			5.0
Emergency Procedures/ Plan	2.4.1	Knowledge of EOP Entry conditions and immediate action steps. (QID 0244)	4.6	1.0
	2.4.4	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating conditions. (QID 0223)	4.3	1.0
	2.4.21	Knowledge of the parameters and logic used to assess the status of inventory safety function. (QID 0243)	4.3	1.0
	2.4.48	Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions. (QID 0237)	3.8	1.0
	Total			4.0
Tier 3 Point Total (SRO)				17/17