

Facility Name:Arkansas Nuclear One Unit 2														Date of Exam:02/22/2008			
Tier	Group	RO K/A Category Points												SRO-Only Points			
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Total	A 2	G *	Total	
1. Emergency & Abnormal Plant Evolutions	1	3	3	3				3	3				3	18	3	3	6
	2	1	2	1	N/A			2	2	N/A			1	9	2	2	4
	Tier Totals	4	5	4				5	5				4	27	5	5	10
2. Plant Systems	1	3	2	3	3	2	2	3	3	2	2	3	28	3	2	5	
	2	1	1	0	1	1	1	1	1	1	1	1	10	0	2	3	
	Tier Totals	4	3	3	4	3	3	4	4	3	3	4	38	5	3	8	
3. Generic Knowledge and Abilities Categories				1	2	3	4	10		1	2	3	4	7			
				2	3	2	3			2	2	2	1				

Note: 1. Ensure that at least two topics from every applicable K/A category are sampled within each tier of the RO and SRO-only outlines (i.e., except for one category in Tier 3 of the SRO-only outline, the "Tier Totals" in each K/A category shall not be less than two).

2. The point total for each group and tier in the proposed outline must match that specified in the table. The final point total for each group and tier may deviate by ± 1 from that specified in the table based on NRC revisions. The final RO exam must total 75 points and the SRO-only exam must total 25 points.

3. Systems/evolutions within each group are identified on the associated outline; systems or evolutions that do not apply at the facility should be deleted and justified; operationally important, site-specific systems that are not included on the outline should be added. Refer to ES-401, Attachment 2, for guidance regarding the elimination of inappropriate K/A statements.

4. Select topics from as many systems and evolutions as possible; sample every system or evolution in the group before selecting a second topic for any system or evolution.

5. Absent a plant-specific priority, only those K/As having an importance rating (IR) of 2.5 or higher shall be selected. Use the RO and SRO ratings for the RO and SRO-only portions, respectively.

6. Select SRO topics for Tiers 1 and 2 from the shaded systems and K/A categories.

7.* The generic (G) K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.

8. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings (IRs) for the applicable license level, and the point totals (#) for each system and category. Enter the group and tier totals for each category in the table above; if fuel handling equipment is sampled in other than Category A2 or G* on the SRO-only exam, enter it on the left side of Column A2 for Tier 2, Group 2 (Note #1 does not apply). Use duplicate pages for RO and SRO-only exams.

9. For Tier 3, select topics from Section 2 of the K/A catalog, and enter the K/A numbers, descriptions, IRs, and point totals (#) on Form ES-401-3. Limit SRO selections to K/As that are linked to 10 CFR 55.43.

	ES-401	PWR Examination Outline						Form ES-401-2		
	Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO)									
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
1/1489	000007 Reactor Trip - Stabilization - Recovery / 1				0 8			Ability to operate and/or monitor the following as they apply to a reactor trip: - AFW System.	4.4	1
2/1490	000008 Pressurizer Vapor Space Accident / 3						2.1. 28	Conduct of Operations - Knowledge of the purpose and function of major system components and controls.	3.2	1
3/1491	000009 Small Break LOCA / 3						2.4. 06	Emergency Procedures/Plan - Knowledge symptom based EOP mitigation strategies.	3.1	1
4/1492	000011 Large Break LOCA / 3		0 2					Knowledge of the interrelations between the Large Break LOCA and the following: - Pumps.	2.6	1
5/1493	000015 RCP Malfunctions / 4			0 1				Knowledge of the reasons for the following responses as they apply to the Reactor Coolant Pump Malfunctions: - Potential damage from high winding and/or bearing temperatures.	2.5	1
	000017 RCP Malfunctions (Loss of RC Flow) / 4							Not Selected		
6/1494	000022 Loss of Rx Coolant Makeup / 2					0 3		Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Pump Makeup: - Failures of flow control valve or controller.	3.1	1
7/1495	000025 Loss of RHR System / 4				1 2			Ability to operate and/or monitor the following as they apply to the Loss of Residual Heat Removal System: - RCS temperature indicators.	3.6	1
8/1496	000026 Loss of Component Cooling Water / 8			0 1				Knowledge of the reasons for the following responses as they apply to the Loss of Component Cooling Water: - The conditions that will initiate the automatic opening and closing of the SWS isolation valves to the CCW/nuclear service water coolers.	3.2	1
9/1497	000027 Pressurizer Pressure Control System Malfunction / 3		0 3					Knowledge of the interrelations between the Pressurizer Pressure Control Malfunctions and the following: - Controllers and positioners.	2.6	1
10/1498	000029 ATWS / 1		0 6					Knowledge of the interrelations between the ATWS and the following: - Breakers, relays, and disconnects.	2.9	1
11/1499	000038 Steam Gen. Tube Rupture / 3	0 3						Knowledge of the operational implications of the following concepts as they apply to the SGTR: - Natural circulation.	3.9	1
12/1500	CE/E05 Steam Line Rupture - Excessive Heat Transfer / 4	0 2						Knowledge of the operational implications of the following concepts as they apply to the (Excess Steam Demand): - Normal, abnormal and emergency operating procedures associated with (Excess Steam Demand).	3.2	1
13/1501	000054 (CE/E06) Loss of Main Feedwater / 4				0 2			Ability to operate and/or monitor the following as they apply to the (Loss of Feedwater): - Operating behavior characteristics of the facility.	3.4	1
14/1502	000055 Station Blackout / 6	0 1						Knowledge of the operational implications of the following concepts as they apply to the Station Blackout: - Effect of battery discharge rates on capacity.	3.3	1
15/1503	000056 Loss of Off-site Power / 6						2.1. 28	Conduct of Operations - Knowledge of the purpose and function of major system components and controls.	3.2	1
16/1504	000057 Loss of Vital AC Inst. Bus / 6					2 0		Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: - Interlocks in effect on loss of ac vital electrical instrument bus that must be bypassed to restore normal equipment operation.	3.6	1
17/1505	000058 Loss of DC Power / 6					0 1		Ability to determine and interpret the following as they apply to the Loss of DC Power: - That a loss of dc power has occurred; verification that substitute power sources have come on line.	3.7	1
18/1506	000062 Loss of Nuclear Svc Water / 4			0 1				Knowledge of the reasons for the following responses as they apply to the Loss of Nuclear Service Water: - The conditions that will initiate the automatic opening and closing of the SWS isolation valves to the nuclear service water coolers.	3.2	1
	000065 Loss of Instrument Air / 8							Not Selected		0
	W/E04 LOCA Outside Containment / 3							Not Selected		0
	W/E11 Loss of Emergency Coolant Recirc. / 4							Not Selected		0
	BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4							Not Selected		0
	K/A Category Totals:	3	3	3	3	3	3	Group Point Total:		18

ES-401 PWR Examination Outline Form ES-401-2									
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO)									
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR #
	000001 Continuous Rod Withdrawal / 1							Not Selected	0
	000003 Dropped Control Rod / 1							Not Selected	0
	000005 Inoperable/Stuck Control Rod / 1							Not Selected	0
	000024 Emergency Boration / 1							Not Selected	0
19/1507	000028 Pressurizer Level Malfunction / 2		03					Knowledge of the interrelations between the Pressurizer Level Control Malfunctions and the following: - Controllers and positioners.	2.6 1
	000032 Loss of Source Range NI / 7							Not Selected	0
	000033 Loss of Intermediate Range NI / 7							Not Selected	0
20/1508	000036 Fuel Handling Accident / 8	03						Knowledge of the operational implications of the following concepts as they apply to Fuel Handling Incidents: - Indications of approaching criticality.	4 1
	000037 Steam Generator Tube Leak / 3							Not Selected	0
21/1509	000051 Loss of Condenser Vacuum / 4					02		Ability to determine and interpret the following as they apply to the Loss of Condenser Vacuum: - Conditions requiring reactor and/or turbine trip.	3.9 1
	000059 Accidental Liquid RadWaste Rel. / 9							Not Selected	0
22/1510	000060 Accidental Gaseous Radwaste Rel. / 9				02			Ability to operate and/or monitor the following as they apply to the Accidental Gaseous Radwaste Release: - Ventilation system.	2.9 1
23/1511	000061 ARM System Alarms / 7			02				Knowledge of the reasons for the following responses as they apply to the Area Radiation Monitoring (ARM) System Alarms: - Guidance contained in alarm response for ARM system.	3.4 1
	000067 Plant Fire On-site / 8							Not Selected	0
	000068 Control Room Evac. / 8							Not Selected	0
	000069 Loss of CTMT Integrity / 5							Not Selected	0
	W/E14 High Containment Pressure / 5							Not Selected	0
24/1512	000074 Inad. Core Cooling / 4					02		Ability to determine and interpret the following as they apply to an Inadequate Core Cooling: - Availability of main or auxiliary feedwater.	4.3 1
	W/E06 Degraded Core Cooling / 4							Not Selected	
	W/E07 Saturated Core Cooling / 4							Not Selected	
	000076 High Reactor Coolant Activity / 9							Not Selected	0
	W/E01 Rediagnosis / 3							Not Selected	0
	W/E02 SI Termination / 3							Not Selected	0
	W/E13 Steam Generator Over-pressure / 4							Not Selected	0
	W/E15 Containment Flooding / 5							Not Selected	0
	W/E16 High Containment Radiation / 9							Not Selected	0
	W/E03 LOCA Cooledown - Depress. / 4							Not Selected	0
25/1513	CE/A13 Natural Circulation Operations / 4		02					Knowledge of the interrelations between the (Natural Circulation Operations) and the following: - 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.	3.4 1
26/1514	CE/A16 Excess RCS Leakage / 2						2.1.07	Conduct of Operations - Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.	3.7 1
27/1515	CE/E09 Functional Recovery				03			Ability to operate and/or monitor the following as they apply to the (Functional Recover): - Desired operating results during abnormal and emergency situations.	3.6 1
K/A Category Totals:		1	2	1	2	2	1	Group Point Total:	9

ES-401		PWR Examination Outline											Form ES-401-2		
		Plant Systems - Tier 2/Group 1 (RO)													
Q#	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)	IR	#
28/1516	003 Reactor Coolant Pump						1 4						Knowledge of the effect of a loss or malfunction of the following will have on the RCPS: - Starting requirements.	2.6	1
29/1517	003 Reactor Coolant Pump								0 2				Ability to (a) predict the impacts of the following malfunctions or operations on the RCPS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Conditions which exist for an abnormal shutdown of an RCP in comparison to a normal shutdown.	3.7	1
30/1518	004 Chemical and Volume Control			0 8									Knowledge of the effect that a loss or malfunction of the CVCS will have on the following: - RCP seal injection.	3.6	1
31/1519	005 Residual Heat Removal			0 7									Knowledge of RHRS design feature(s) and/or interlock(s) which provide for the following: - System protection logics, including high-pressure interlock, reset controls, and valve interlocks.	3.2	1
32/1520	006 Emergency Core Cooling				0 8								Knowledge of the operational implications of the following concepts as they apply to the ECCS: - Operation of pumps in parallel.	2.9	1
33/1521	007 Pressurizer Relief/Quench Tank			0 1									Knowledge of PRTS design feature(s) and/or interlock(s) which provide for the following: - Quench tank cooling.	2.6	1
34/1522	008 Component Cooling Water								0 5				Ability to (a) predict the impacts of the following malfunctions or operations on the CCWS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Effect of loss of instrument and control air on the position of the CCW valves that are air operated.	3.3	1
35/1523	008 Component Cooling Water										2.4. 04		Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4	1
36/1524	010 Pressurizer Pressure Control			0 1									Knowledge of the effect that a loss or malfunction of the PZR PCS will have on the following: - RCS.	3.8	1
37/1525	010 Pressurizer Pressure Control										2.1. 20		Conduct of Operations - Ability to execute procedure steps.	4.3	1
38/1526	012 Reactor Protection				0 2								Knowledge of the operational implications of the following concepts as they apply to the RPS: - Power density.	3.1	1
39/1527	013 Engineered Safety Features Actuation	1 5											Knowledge of the physical connections and/or cause-effect relationships between the ESFAS and the following systems: - MFW System.	3.4	1
40/1528	022 Containment Cooling		0 1										Knowledge of bus power supplies to the following: - Containment cooling fans.	3	1
	025 Ice Condenser												Not Selected		0
41/1529	026 Containment Spray						0 6						Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CSS controls including: - Containment spray pump cooling.	2.7	1
42/1530	039 Main and Reheat Steam			0 5									Knowledge of the effect that a loss or malfunction of the MRSS will have on the following: - RCS.	3.6	1
43/1531	039 Main and Reheat Steam									0 3			Ability to manually operate and/or monitor in the control room: - MFW pump turbines.	2.8	1
44/1532	059 Main Feedwater			0 5									Knowledge of MFW System design feature(s) and/or interlock(s) which provide for the following: - Control of speed of MFW pump turbine.	2.5	1
45/1533	061 Auxiliary/Emergency Feedwater	0 5											Knowledge of the physical connections and/or cause-effect relationships between the AFW System and the following systems: - Condensate system.	2.6	1
46/1534	062 AC Electrical Distribution	0 4											Knowledge of the physical connections and/or cause-effect relationships between the A.C. Distribution System and the following systems: - Off-site power sources.	3.7	1
47/1535	063 DC Electrical Distribution							0 1					Ability to (a) predict the impacts of the following malfunctions or operations on the D.C. Electrical System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Grounds.	2.5	1
48/1536	063 DC Electrical Distribution									2.4. 31			Emergency Procedures/Plan - Knowledge of annunciators alarms and indications, and use of the response instructions.	3.3	1
49/1537	064 Emergency Diesel Generator					0 7							Knowledge of the effect of a loss or malfunction of the following will have on the ED/G System: - Air receivers.	2.7	1
50/1538	064 Emergency Diesel Generator								1 2				Ability to monitor automatic operation of the ED/G System, including: - Purpose of automatic load sequencer.	3.3	1
51/1539	073 Process Radiation Monitoring						0 1						Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the PRM System controls including: - Radiation levels.	3.2	1
52/1540	076 Service Water		0 1										Knowledge of bus power supplies to the following: - Service water.	2.7	1
53/1541	078 Instrument Air								0 1				Ability to monitor automatic operation of the IAS, including: - Air pressure.	3.1	1
54/1542	103 Containment						0 1						Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Containment System controls including: - Containment pressure, temperature, and humidity.	3.7	1
55/1543	103 Containment								0 6				Ability to manually operate and/or monitor in the control room: - Operation of the containment personnel airlock door.	2.7	1
K/A Category Totals:		3	2	3	3	2	2	3	3	2	2	3	Group Point Total:		28

	ES-401 PWR Examination Outline													Form ES-401-2	
Plant Systems - Tier 2/Group 2 (RO)															
Q#	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)	IR	#
	001 Control Rod Drive												Not Selected		0
	002 Reactor Coolant												Not Selected		0
	011 Pressurizer Level Control												Not Selected		0
56/1544	014 Rod Position Indication								0 3				Ability to (a) predict the impacts of the following malfunctions or operations on the RPIS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Dropped rod.	3.6	1
57/1545	015 Nuclear Instrumentation						0 4						Knowledge of the effect of a loss or malfunction of the following will have on the NIS: - Bistables and logic circuits.	3.1	1
	016 Non-nuclear Instrumentation												Not Selected		0
	017 In-core Temperature Monitor												Not Selected		0
	027 Containment Iodine Removal												Not Selected		0
58/1546	028 Hydrogen Recombiner and Purge Control										0 1		Ability to manually operate and/or monitor in the control room: - HRPS controls.	4	1
59/1547	029 Containment Purge				0 3								Knowledge of Containment Purge System design feature(s) and/or interlock(s) which provide for the following: - Automatic purge isolation.	3.2	1
	033 Spent Fuel Pool Cooling												Not Selected		0
60/1548	034 Fuel Handling Equipment									0 1			Ability to monitor automatic operation of the Fuel Handling System, including: - Travel limits.	2.5	1
	035 Steam Generator												Not Selected		0
	041 Steam Dump/Turbine Bypass Control												Not Selected		0
61/1549	045 Main Turbine Generator							0 5					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 T/G trip.	3.8	1
	055 Condenser Air Removal												Not Selected		0
62/1550	056 Condensate											2.1. 27	Conduct of Operations - Knowledge of system purpose and or function.	2.8	1
63/1551	068 Liquid Radwaste	0 7											Knowledge of the physical connections and/or cause-effect relationships between the Liquid Radwaste System and the following systems: - Sources of liquid wastes for LRS.	2.7	1
	071 Waste Gas Disposal												Not Selected		0
64/1552	072 Area Radiation Monitoring					0 1							Knowledge of the operational implications of the following concepts as they apply to the ARM system: - Radiation theory, including sources, types, units, and effects.	2.7	1
65/1553	075 Circulating Water		0 3										Knowledge of bus power supplies to the following: - Emergency/essential SWS pumps.	2.6	1
	079 Station Air												Not Selected		0
	086 Fire Protection												Not Selected		0
	K/A Category Totals:	1	1	0	1	1	1	1	1	1	1	1	Group Point Total:		10

ES-401		PWR Examination Outline							Form ES-401-2	
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (SRO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
76/1564	000007 Reactor Trip - Stabilization - Recovery / 1						04. 48	Emergency Procedures/Plan - 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.	3.8	1
	000008 Pressurizer Vapor Space Accident / 3							Not Selected		0
	000009 Small Break LOCA / 3							Not Selected		0
	000011 Large Break LOCA / 3							Not Selected		0
	000015 RCP Malfunctions / 4							Not Selected		1
77/1589	000017 RCP Malfunctions (Loss of RC Flow) / 4						02. 22	Equipment Control - Knowledge of limiting conditions for operations and safety limits.	4.1	
	000022 Loss of Rx Coolant Makeup / 2							Not Selected		0
	000025 Loss of RHR System / 4							Not Selected		0
	000026 Loss of Component Cooling Water / 8							Not Selected		0
	000027 Pressurizer Pressure Control System Malfunction / 3							Not Selected		0
78/1565	000029 ATWS / 1						02. 08	Equipment Control - Knowledge of the process for determining if the proposed change, test, or experiment involves an unreviewed safety question.	3.3	1
	000038 Steam Gen. Tube Rupture / 3							Not Selected		0
79/1566	000040 Steam Line Rupture - Excessive Heat Transfer / 4					0 2		Ability to determine and interpret the following as they apply to the Steam Line Rupture: - Conditions requiring a reactor trip.	4.7	1
	WE12 Uncontrolled Depressurization of all Steam Generators / 4							Not Selected		
	000054 (CE/E06) Loss of Main Feedwater / 4							Not Selected		0
	000055 Station Blackout / 6							Not Selected		0
	000056 Loss of Off-site Power / 6							Not Selected		0
	000057 Loss of Vital AC Inst. Bus / 6							Not Selected		0
	000058 Loss of DC Power / 6							Not Selected		0
	000062 Loss of Nuclear Svc Water / 4							Not Selected		0
80/1568	000065 Loss of Instrument Air / 8					0 5		Ability to determine and interpret the following as they apply to the Loss of Instrument Air: - When to commence plant shutdown if instrument air pressure is decreasing.	4.1	1
	WE04 LOCA Outside Containment / 3							Not Selected		0
	WE11 Loss of Emergency Coolant Recirc. / 4							Not Selected		0
81/1569	CE/E02 Reactor Trip - Stabilization - Recovery / 1					0 2		Ability to determine and interpret the following as they apply to the (Reactor Trip Recovery): - Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.	4	1
K/A Category Totals:		0	0	0	0	3	3	Group Point Total:		6

ES-401 PWR Examination Outline Form ES-401-2										
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (SRO)										
Q#	E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
	000001 Continuous Rod Withdrawal / 1							Not Selected		0
	000003 Dropped Control Rod / 1							Not Selected		0
	000005 Inoperable/Stuck Control Rod / 1							Not Selected		0
82/1570	000024 Emergency Boration / 1						04.06	Emergency Procedures/Plan - Knowledge symptom based EOP mitigation strategies.	4	1
	000028 Pressurizer Level Malfunction / 2							Not Selected		0
	000032 Loss of Source Range NI / 7							Not Selected		0
	000033 Loss of Intermediate Range NI / 7							Not Selected		0
	000036 Fuel Handling Accident / 8							Not Selected		0
83/1571	000037 Steam Generator Tube Leak / 3						09	Ability to determine and interpret the following as they apply to the Steam Generator Tube Leak: - System status, using independent readings from redundant Condensate air ejector exhaust monitor.	3.4	1
	000051 Loss of Condenser Vacuum / 4							Not Selected		0
	000059 Accidental Liquid RadWaste Rel. / 9							Not Selected		0
	000060 Accidental Gaseous Radwaste Rel. / 9							Not Selected		0
	000061 ARM System Alarms / 7							Not Selected		0
	000067 Plant Fire On-site / 8							Not Selected		0
84/1572	000068 Control Room Evac. / 8						04.04	Emergency Procedures/Plan - Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.	4.3	1
85/1573	000069 Loss of CTMT Integrity / 5						01	Ability to determine and interpret the following as they apply to the Loss of Containment Integrity: - Loss of containment integrity.	4.3	1
	W/E14 High Containment Pressure / 5							Not Selected		
	000074 Inad. Core Cooling / 4							Not Selected		
	W/E06 Degraded Core Cooling / 4							Not Selected		0
	W/E07 Saturated Core Cooling / 4							Not Selected		
	000076 High Reactor Coolant Activity / 9							Not Selected		0
	W/E01 Rediagnosis / 3							Not Selected		0
	W/E02 SI Termination / 3							Not Selected		
	W/E13 Steam Generator Over-pressure / 4							Not Selected		0
	W/E15 Containment Flooding / 5							Not Selected		0
	W/E16 High Containment Radiation / 9							Not Selected		0
	W/E03 LOCA Cooledown - Depress. / 4							Not Selected		0
	W/E09 Natural Circulation Operations / 4							Not Selected		0
	W/E10 Natural Circulation with Steam Voide in Vessel with/without RVLIS. / 4							Not Selected		
	W/E08 RCS Overcooling - PTS / 4							Not Selected		0
K/A Category Totals:		0	0	0	0	2	2	Group Point Total:		4

ES-401		PWR Examination Outline Plant Systems - Tier 2/Group 1 (SRO)												Form ES-401-2	
Q#	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)	IR	#
	003 Reactor Coolant Pump												Not Selected		0
	004 Chemical and Volume Control												Not Selected		0
86/1574	005 Residual Heat Removal								0 3				Ability to (a) predict the impacts of the following malfunctions or operations on the RHRS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - RHR pump/motor malfunction.	3.1	1
	006 Emergency Core Cooling												Not Selected		0
	007 Pressurizer Relief/Quench Tank												Not Selected		0
	008 Component Cooling Water												Not Selected		0
	010 Pressurizer Pressure Control												Not Selected		0
	012 Reactor Protection												Not Selected		0
	013 Engineered Safety Features Actuation												Not Selected		0
87/1575	022 Containment Cooling								0 4				Ability to (a) predict the impacts of the following malfunctions or operations on the CCS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Loss of service water.	3.2	1
	025 Ice Condenser												Not Selected		0
88/1576	026 Containment Spray											04. 06	Knowledge of symptom based EOP mitigation strategies	3.8	1
	039 Main and Reheat Steam												Not Selected		0
	059 Main Feedwater														0
89/1577	061 Auxiliary/Emergency Feedwater											04. 30	Emergency Procedures/Plan - Knowledge of which events related to system operations/status should be reported to outside agencies.	3.6	1
	062 AC Electrical Distribution												Not Selected		0
	063 DC Electrical Distribution												Not Selected		0
	064 Emergency Diesel Generator												Not Selected		0
90/1578	073 Process Radiation Monitoring								0 2				Ability to (a) predict the impacts of the following malfunctions or operations on the PRM System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Detector failure	3.2	1
	076 Service Water												Not Selected		0
	078 Instrument Air												Not Selected		0
	103 Containment												Not Selected		0
K/A Category Totals:		0	0	0	0	0	0	0	3	0	0	2	Group Point Total:		5

ES-401														PWR Examination Outline														Form ES-401-2	
														Plant Systems - Tier 2/Group 2 (SRO)															
Q#	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)	IR	#														
91/1579	001 Control Rod Drive												04.38	Emergency Procedures/Plan - Ability to take actions called for in the facility emergency plan, including (if required) supporting or acting as emergency coordinator.	4	1													
	002 Reactor Coolant													Not Selected		0													
	011 Pressurizer Level Control													Not Selected		0													
	014 Rod Position Indication													Not Selected		0													
	015 Nuclear Instrumentation													Not Selected		0													
	016 Non-nuclear Instrumentation													Not Selected		0													
92/1580	017 In-core Temperature Monitor								02					Ability to (a) predict the impacts of the following malfunctions or operations on the ITM System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Core damage.	4.1	1													
	027 Containment Iodine Removal													Not Selected		0													
	028 Hydrogen Recombiner and Purge Control													Not Selected		0													
	029 Containment Purge													Not Selected		0													
	033 Spent Fuel Pool Cooling													Not Selected		0													
	034 Fuel Handling Equipment													Not Selected		0													
	035 Steam Generator													Not Selected		0													
	041 Steam Dump/Turbine Bypass Control													Not Selected		0													
	045 Main Turbine Generator													Not Selected		0													
	055 Condenser Air Removal													Not Selected		0													
	056 Condensate													Not Selected		0													
	068 Liquid Radwaste													Not Selected		0													
93/1581	071 Waste Gas Disposal								04					Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: - Loss of Cover Gas.	2.7	1													
	072 Area Radiation Monitoring													Not Selected		0													
	075 Circulating Water													Not Selected		0													
	079 Station Air													Not Selected		0													
	086 Fire Protection													Not Selected		0													
K/A Category Totals:		0	0	0	0	0	0	0	2	0	0	1	Group Point Total:		3														

ES-401 Generic Knowledge and Abilities Outline (Tier 3 SRO) Form ES-401-3							
Facility Name:Arkansas Nuclear One Unit 2 Date of Exam:02/22/2008							
Q#	Category	K/A #	Topic	RO		SRO-Only	
				IR	#	IR	#
66/1554	1. Conduct of Operations	2.1. 03	Knowledge of shift turnover practices.	3	1		
67/1555		2.1. 28	Knowledge of the purpose and function of major system components and controls.	3.2	1		
94/1582		2.1. 04	Knowledge of shift staffing requirements.			3.4	1
95/1583		2.1. 32	Ability to explain and apply all system limits and precautions.			3.8	1
		2.1.					
		2.1.					
		Subtotal				2	
68/1556	2. Equipment Control	2.2. 01	Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.	3.7	1		
69/1557		2.2. 28	Knowledge of new and spent fuel movement procedures.	2.6	1		
70/1558		2.2. 34	Knowledge of the process for determining the internal and external effects on core reactivity.	2.8	1		
96/1584		2.2. 15	Ability to identify and utilize as-built design and configuration change documentation to ascertain expected current plant configuration and operate the plant.			2.9	1
97/1585		2.2. 21	Knowledge of pre- and post-maintenance operability requirements.			3.5	1
		2.2.					
		Subtotal				3	
71/1559	3. Radiation Control	2.3. 01	Knowledge of 10 CFR: 20 and related facility radiation control requirements.	2.6	1		
72/1560		2.3. 10	Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.	2.9	1		
98/1586		2.3. 02	Knowledge of facility ALARA program.			2.9	1
99/1587		2.3. 08	Knowledge of the process for performing a planned gaseous radioactive release.			3.2	1
		2.3.					
		2.3.					
		Subtotal				2	
73/1561	4. Emergency Procedures / Plan	2.4. 13	Knowledge of crew roles and responsibilities during EOP flowchart use.	3.3	1		
74/1562		2.4. 15	Knowledge of communications procedures associated with EOP implementation.	3	1		
75/1563		2.4. 49	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.	4	1		
100/1588		2.4. 04	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.			4.3	1
		2.4.					
		2.4.					
		Subtotal				3	
Tier 3 Point Total					10		7

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