Facility: South Texas Project Rev 3 Printed: 02/24/2010

Date Of Exam: 05/27/2010

Tier	Group	RO K/A Category Points												SRO-Only Points					
		K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G*	Total	A2			G*	Total	
1. Emergency & Abnormal Plant Evolutions	1	3	2	3	N/A			3	4	N/A		3	18	0			0	0	
	2	2	2	2				2	0			1	9	0			0	0	
	Tier Totals	5	4	5				5	4			4	27	0			0	0	
2. Plant Systems	1	3	2	3	3	3	2	3	3	2	3	1	28	0			0	0	
	2	1	1	1	1	1	1	1	0	1	1	1	10	0		0	0	0	
	Tier Totals	4	3	4	4	4	3	4	3	3	4	2	38	0			0	0	
3. Generic Knowledge And Abilities Categories		1			2			3			4		10	1	2	3	4		0
		3			2			2			3			0	0	0	0		

Note:

1. Ensure that at least two topics from every 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/evolutions that are not included on the outline should be added. Refer to Section D.1.b of ES-401 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. Refer to Section D.1.b of ES-401 for the applicable K/As.

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.

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

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points	Bank#
000007 Reactor Trip - Stabilization - Recovery / 1					X		EA2.02 - Proper actions to be taken if the automatic safety functions have not taken place	4.3	1	688
000008 Pressurizer Vapor Space Accident / 3	X						AK1.02 - Change in leak rate with change in pressure	3.1	1	1828
000011 Large Break LOCA / 3		X					EK2.02 - Pumps	2.6*	1	664
000015/000017 RCP Malfunctions / 4	X						AK1.01 - Natural circulation in a nuclear reactor power plant	4.4	1	1907
000025 Loss of RHR System / 4				X			AA1.09 - LPI pump switches, ammeter, discharge pressure gauge, flow meter, and indicators	3.2	1	1943
000026 Loss of Component Cooling Water / 8					X		AA2.02 - The cause of possible CCW loss	2.9	1	1906
000029 ATWS / 1		X					EK2.06 - Breakers, relays, and disconnects	2.9*	1	1577
000038 Steam Gen. Tube Rupture / 3						X	2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry-level conditions for emergency and abnormal operating procedures.	4.5	1	1901
000054 Loss of Main Feedwater / 4						X	2.4.20 - Knowledge of operational implications of EOP warnings, cautions, and notes.	3.8	1	1902
000056 Loss of Off-site Power / 6					X		AA2.78 - Bus voltmeters	2.7	1	1942
000057 Loss of Vital AC Inst. Bus / 6				X			AA1.05 - Backup instrument indications	3.2	1	1903
000062 Loss of Nuclear Svc Water / 4						X	2.2.40 - Ability to apply Technical Specifications for a system.	3.4	1	1912
000065 Loss of Instrument Air / 8			X				AK3.03 - Knowing effects on plant operation of isolating certain equipment from instrument air	2.9	1	1349
000077 Generator Voltage and Electric Grid Disturbances / 6					X		AA2.05 - Operational status of offsite circuit	3.2	1	1904
W/E04 LOCA Outside Containment / 3			X				EK3.1 - Facility operating characteristics during transient conditions, including coolant chemistry and the effects of temperature, pressure, and reactivity changes and operating limitations and reasons for these operating characteristics	3.2	1	1921

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

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points	Bank#
W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	X						EK1.3 - Annunciators and conditions indicating signals, and remedial actions associated with the Loss of Secondary Heat Sink	3.9	1	1905
W/E11 Loss of Emergency Coolant Recirc. / 4				X			EA1.2 - Operating behavior characteristics of the facility	3.5	1	18
W/E12 - Steam Line Rupture - Excessive Heat Transfer / 4			X				EK3.3 - Manipulation of controls required to obtain desired operating results during abnormal, and emergency situations	3.5	1	1300
K/A Category Totals:	**3**	**2**	**3**	**3**	**4**	**3**	**Group Point Total:**		**18**	

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

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	KA Topic	Imp.	Points	Bank#
000005 Inoperable/Stuck Control Rod / 1			X				AK3.01 - Boration and emergency boration in the event of a stuck rod during trip or normal evolutions	4.0	1	973
000024 Emergency Boration / 1						X	2.1.32 - Ability to explain and apply system limits and precautions.	3.8	1	1908
000067 Plant Fire On-site / 9	X						AK1.01 - Fire classifications, by type	2.9	1	534
000074 Inad. Core Cooling / 4		X					EK2.08 - Sensors and detectors	2.5*	1	1909
W/E01 Rediagnosis / 3				X			EA1.1 - Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features	3.7	1	1910
W/E03 LOCA Cooldown - Depress. / 4				X			EA1.3 - Desired operating results during abnormal and emergency situations	3.7	1	1911
W/E08 RCS Overcooling - PTS / 4	X						EK1.2 - Normal, abnormal and emergency operating procedures associated with Pressurized Thermal Shock	3.4	1	1261
W/E13 Steam Generator Over-pressure / 4		X					EK2.2 - 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	3.0	1	1913
W/E16 High Containment Radiation / 9			X				EK3.2 - Normal, abnormal and emergency operating procedures associated with High Containment Radiation	2.9	1	1914
K/A Category Totals:	**2**	**2**	**2**	**2**	**0**	**1**	**Group Point Total:**		**9**	

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ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points	Bank#
003 Reactor Coolant Pump					X							K5.05 - The dependency of RCS flow rates upon the number of operating RCPs	2.8*	1	1915
004 Chemical and Volume Control					X							K5.40 - Response of PRT during bubble formation in PZR: increase in quench tank pressure when cycling PORV shows that complete steam bubble does not exist, that significant noncondensable gas is still present	3.0*	1	1918
004 Chemical and Volume Control										X		A4.13 - VCT level control and pressure control	3.3	1	1605
005 Residual Heat Removal						X						K6.03 - RHR heat exchanger	2.5	1	1034
006 Emergency Core Cooling					X							K5.11 - Basic heat transfer equation	2.5	1	1926
006 Emergency Core Cooling									X			A3.05 - Safety Injection Pumps	4.2	1	303
007 Pressurizer Relief/Quench Tank	X											K1.03 - RCS	3.0	1	160
008 Component Cooling Water			X									K3.03 - RCP	4.1	1	1927
010 Pressurizer Pressure Control			X									K3.01 - RCS	3.8	1	1440
012 Reactor Protection										X		A4.07 - M/G set breakers	3.9*	1	1919
012 Reactor Protection				X								K4.02 - Automatic reactor trip when RPS setpoints are exceeded for each RPS function; basis for each	3.9	1	1930
013 Engineered Safety Features Actuation		X										K2.01 - ESFAS/safeguards equipment control	3.6*	1	1523
022 Containment Cooling	X											K1.01 - SWS/cooling system	3.5	1	1010
026 Containment Spray		X										K2.02 - MOVs	2.7*	1	1920
039 Main and Reheat Steam								X				A2.04 - Malfunctioning steam dump	3.4	1	1922
059 Main Feedwater							X					A1.07 - Feed Pump speed, including normal control speed for ICS	2.5*	1	650
061 Auxiliary/Emergency Feedwater			X									K3.02 - S/G	4.2	1	1934
061 Auxiliary/Emergency Feedwater											X	2.4.34 - Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.	4.2	1	1932

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ES - 401 **Plant Systems - Tier 2 / Group 1** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points	Bank#
062 AC Electrical Distribution								X				A2.16 - Degraded system voltages	2.5	1	1923
063 DC Electrical Distribution				X								K4.02 - Breaker interlocks, permissives, bypasses and cross-ties	2.9*	1	1937
064 Emergency Diesel Generator						X						K6.07 - Air receivers	2.7	1	1933
073 Process Radiation Monitoring	X											K1.01 - Those systems served by PRMs	3.6	1	1488
076 Service Water				X								K4.02 - Automatic start features associated with SWS pump controls	2.9	1	329
076 Service Water							X					A1.02 - Reactor and turbine building closed cooling water temperatures	2.6*	1	1083
078 Instrument Air									X			A3.01 - Air pressure	3.1	1	1810
078 Instrument Air										X		A4.01 - Pressure gauges	3.1	1	1931
103 Containment								X				A2.05 - Emergency containment entry	2.9	1	465
103 Containment							X					A1.01 - Containment pressure, temperature, and humidity	3.7	1	1125
K/A Category Totals:	**3**	**2**	**3**	**3**	**3**	**2**	**3**	**3**	**2**	**3**	**1**	**Group Point Total:**		**28**	

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ES - 401 **Plant Systems - Tier 2 / Group 2** **Form ES-401-2**

Sys/Evol # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	KA Topic	Imp.	Points	Bank#
014 Rod Position Indication							X					A1.03 - PDIL, PPDIL	3.6?	1	1929
027 Containment Iodine Removal					X							K5.01 - Purpose of charcoal filters	3.1*	1	1928
028 Hydrogen Recombiner and Purge Control		X										K2.01 - Hydrogen recombiners	2.5*	1	1686
034 Fuel Handling Equipment	X											K1.05 - Shutdown monitor	2.5*	1	1924
035 Steam Generator									X			A3.01 - S/G water level control	4.0	1	709
041 Steam Dump/Turbine Bypass Control						X						K6.03 - Controller and positioners, including ICS, S/G, CRDS	2.7	1	1938
045 Main Turbine Generator			X									K3.01 - Remainder of the plant	2.9	1	726
056 Condensate											X	2.4.46 - Ability to verify that the alarms are consistent with the plant conditions.	4.2	1	1917
068 Liquid Radwaste										X		A4.02 - Remote radwaste release	3.2*	1	1916
086 Fire Protection				X								K4.02 - Maintenance of fire header pressure	3.0	1	1939
K/A Category Totals:	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**0**	**1**	**1**	**1**	**Group Point Total:**		**10**	

Generic Knowledge and Abilities Outline (Tier 3)

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Form ES-401-3

Generic Category	KA	KA Topic	Imp.	Points	Bank#
Conduct of Operations	2.1.4	Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc.	3.3	1	854
	2.1.9	Ability to direct personnel activities inside the control room.	2.9*	1	759
	2.1.42	Knowledge of new and spent fuel movement procedures.	2.5	1	1935
		Category Total:		**3**	
Equipment Control	2.2.14	Knowledge of the process for controlling equipment configuration or status.	3.9	1	760
	2.2.22	Knowledge of limiting conditions for operations and safety limits.	4.0	1	1058
		Category Total:		**2**	
Radiation Control	2.3.4	Knowledge of radiation exposure limits under normal or emergency conditions.	3.2	1	59
	2.3.5	Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personal monitoring equipment, etc.	2.9	1	1936
		Category Total:		**2**	
Emergency Procedures/Plan	2.4.2	Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.	4.5	1	1941
	2.4.21	Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.	4.0	1	2030
	2.4.26	Knowledge of facility protection requirements, including fire brigade and portable fire fighting equipment usage.	3.1	1	1940
		Category Total:		**3**	
		Generic Total:		**10**	

ES-401 Record of Rejected K/As Form ES-401-4

Tier/ Group	Randomly Selected K/A	Reason For Rejection
1/1	APE 027 G2.4.12	Allowable per NUREG 1021, ES-401.D.1.b. Randomly selected APE 054 G2.4.20 as replacement.
1/1	APE 058 G2.4.40	Allowable per NUREG 1021, ES-401.D.1.b. Randomly selected APE 062 G2.2.40 as replacement.
1/1	EPE 007 EK2.03	Removed at Chief Examiners request. Randomly selected EPE 007 EA 2.02 as replacement.
1/2	APE 060 AK3.02	STP does not have a procedural or system provision for isolating Auxiliary Bldg. ventilation in response to gaseous releases. Randomly selected APE 005 AK3.01 as replacement.
1/2	APE 061 AA2.06	An appropriately discriminating RO question cannot be developed as the actions required for an area rad monitor channel failure would be primarily be administrative (SRO level) since no plant systems would be impacted. The RO would only write a Condition Report. Randomly selected APE W/E16 EK3.2 as replacement.
2/1	022 K4.02	STP does not have variable speed fans. Randomly selected 022 K1.01 as replacement.
2/1	103 G2.1.15	Allowable per NUREG 1021, ES-401.D.1.b. Randomly selected 103 A1.01 as replacement.
2/1	063 K4.04	At STP there are no trips associated with the DC electrical distribution system or its components. Randomly selected 063 K4.02 as replacement.
2/1	076 G2.4.30	This KA relates to reporting requirements which is an SRO function at STP. Randomly selected 076 K4.02 as replacement.
2/2	017 K6.01	This KA was essentially a duplicate of KA EPE 074 EK2.08 selected in the Tier 1, Group 2. Randomly selected 041 K6.03 as replacement.
2/2	033 K4.05	At STP there are no design features associated with Spent Fuel Pool Cooling that ensure adequate SDM (boron) is maintained. Randomly selected 045 K3.01 as replacement.
2/2	041 K2.01	STP does not have an Integrated Control System. Randomly selected 028 K2.01 as replacement.
2/2	072 K3.02	The knowledge required by this KA is related more to the SRO level than RO as it has to do with administrative requirements associated with fuel handling. Randomly selected 086 K4.02 as replacement.