Facility: Turkey Point Date of Exam: November 2010

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	A2	G*	Total
1. Emergency & Abnormal Plant Evolutions	1	3	3	3	N/A			3	3	N/A		3	18	3	3	6
	2	1	2	1				1	2			2	9	2	2	4
	Tier Totals	4	5	4				4	5			5	27	5	5	10
2. Plant Systems	1	3	3	1	2	3	3	3	3	2	3	2	28	3	2	5
	2	1	1	1	1	1	1	1	1	0	1	1	10	2	1	3
	Tier Totals	4	4	2	3	4	4	4	4	2	4	3	38	5	3	8
3. Generic Knowledge and Abilities Categories		1			2			3			4		10	1	2	3	4	7
		3			3			2			2			1	2	2	2	

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 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 KAs.
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 **Record of Rejected K/As** **Form ES-401-4**

Tier / Group	Randomly Selected K/A	Reason for Rejection
RO 1/1	026 AK3.01	The only automatic service water valves associated with the CCW system are the intake cooling water valves POV-3/4-4882 & - 4883 located in the outside turbine building. These valves only isolate non-essential loads following an SI (which in essence provides *more* cooling to the CCW heat exchangers). These valves fail closed and have accumulators to hold valves open following a loss of air. Chief Examiner randomly re-selected 026 AK3.03
RO 2/2	028 K2.01	Turkey Point does not have hydrogen recombiners; therefore, K/A does not match for power supply. Chief Examiner randomly re-selected 028 K3.01

ES-401 PWR Examination Outline Form ES-401-2

Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO) ~~SRO~~

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1									
000008 Pressurizer Vapor Space Accident / 3						R	008AG2.4.35	3.8	
000009 Small Break LOCA / 3									
000011 Large Break LOCA / 3						R	011EG2.2.36	3.1	
000015/17 RCP Malfunctions / 4									
000022 Loss of Rx Coolant Makeup / 2	R						022AK1.03	3.0	
000025 Loss of RHR System / 4						R	025AG2.4.49	4.6	
000026 Loss of Component Cooling Water / 8			R				026AK3.01 (REJECTED)	3.2	
000027 Pressurizer Pressure Control System Malfunction / 3		R					027AK2.03	2.6	
000029 ATWS / 1					R		029EA2.07	4.2	
000038 Steam Gen. Tube Rupture / 3					R		038EA2.13	3.1	
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4			R				WE12EK3.4	3.5	
000054 (CE/E06) Loss of Main Feedwater / 4				R			054AA1.03	3.5	
000055 Station Blackout / 6	R						055EK1.01	3.3	
000056 Loss of Off-site Power / 6				R			056AA1.18	3.2	
000057 Loss of Vital AC Inst. Bus / 6					R		057AA2.04	3.7	
000058 Loss of DC Power / 6	R						058AK1.01	2.8	
000062 Loss of Nuclear Svc Water / 4									
000065 Loss of Instrument Air / 8									
W/E04 LOCA Outside Containment / 3		R					WE04EK2.1	3.5	
W/E11 Loss of Emergency Coolant Recirc. / 4			R				WE11EK3.3	3.8	
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4		R					WE05EK2.2	3.9	
000077 Generator Voltage and Electric Grid Disturbances / 6				R			000077AA1.03	3.8	
K/A Category Totals:	3	3	3	3	3	3	Group Point Total:		18/~~6~~

T1G1 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
008AG2.4.35	Pressurizer Vapor Space Accident / 3	3.8	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of local auxiliary operator tasks during emergency and the resultant operational effects
011EG2.2.36	Large Break LOCA / 3	3.1	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions of operations
022AK1.03	Loss of Rx Coolant Makeup / 2	3	3.4	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Relationship between charging flow and PZR level
025AG2.4.49	Loss of RHR System / 4	4.6	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.
~~026AK3.01~~	Loss of Component Cooling Water / 8	3.2	3.5	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	~~The conditions that will initiate the automatic opening and closing of the SWS isolation valves to the CCWS coolers.~~
	REJECTED and replaced w/ 026AK3.01														
027AK2.03	Pressurizer Pressure Control System Malfunction / 3	2.6	2.8	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Controllers and positioners
029EA2.07	ATWS / 1	4.2	4.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Reactor trip breaker indicating lights
038EA2.13	Steam Gen. Tube Rupture / 3	3.1	3.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Magnitude of rupture
054AA1.03	Loss of Main Feedwater / 4	3.5	3.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	AFW auxiliaries, including oil cooling water supply
055EK1.01	Station Blackout / 6	3.3	3.7	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Effect of battery discharge rates on capacity
056AA1.18	Loss of Off-site Power / 6	3.2	3.2	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Control room normal ventilation supply fan

T1G1 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:	
057AA2.04	Loss of Vital AC Inst. Bus / 6	3.7	4	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	ESF system panel alarm annunciators and channel status indicators	
058AK1.01	Loss of DC Power / 6	2.8	3.1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Battery charger equipment and instrumentation	
077AA1.03	Generator Voltage and Electric Grid Disturbances / 6	3.8	3.7	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Voltatge regulator controls	
WE04EK2.1	LOCA Outside Containment / 3	3.5	3.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Components and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes and automatic and manual features.	*
WE05EK2.2	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.9	4.2	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	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.	*
WE11EK3.3	Loss of Emergency Coolant Recirc. / 4	3.8	3.8	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	Manipulation of controls required to obtain desired operating results during abnormal and emergency situations.	
WE12EK3.4	Steam Line Rupture - Excessive Heat Transfer / 4	3.5	3.8	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.	

ES-401 PWR Examination Outline Form ES-401-2

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)

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		R					001 AK2.08	3.1	
000003 Dropped Control Rod / 1					R		003 AA2.02	2.7	
000005 Inoperable/Stuck Control Rod / 1									
000024 Emergency Boration / 1		R					024AK2.04	2.6	
000028 Pressurizer Level Malfunction / 2									
000032 Loss of Source Range NI / 7									
000033 Loss of Intermediate Range NI / 7									
000036 (BW/A08) Fuel Handling Accident / 8									
000037 Steam Generator Tube Leak / 3									
000051 Loss of Condenser Vacuum / 4						R	051 AG2.4.46	4.2	
000059 Accidental Liquid RadWaste Rel. / 9									
000060 Accidental Gaseous Radwaste Rel. / 9	R						060 AK1.04	2.5	
000061 ARM System Alarms / 7									
000067 Plant Fire On-site / 8									
000068 (BW/A06) Control Room Evac. / 8									
000069 (W/E14) Loss of CTMT Integrity / 5									
000074 (W/E06&E07) Inad. Core Cooling / 4									
000076 High Reactor Coolant Activity / 9									
W/EO1 & E02 Rediagnosis & SI Termination / 3				R			WE01EA1.2	3.3	
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5						R	WE15EG2.4.30	2.7	
W/E16 High Containment Radiation / 9					R		WE16EA2.2	3.0	
BW/A01 Plant Runback / 1									
BW/A02&A03 Loss of NNI-X/Y / 7									
BW/A04 Turbine Trip / 4									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
BW/E03 Inadequate Subcooling Margin / 4									
BW/E08; W/E03 LOCA Cooldown - Depress. / 4									
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4			R				WE10EK3.4	3.4	
BW/E13&E14 EOP Rules and Enclosures									
CE/A11; W/E08 RCS Overcooling - PTS / 4									
CE/A16 Excess RCS Leakage / 2									
CE/E09 Functional Recovery									
K/A Category Point Totals:	1	2	1	1	2	2	Group Point Total:		9/4

T1G2 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
001AK2.08	Continuous Rod Withdrawal / 1	3.1	3	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Individual rod display lights and indications
003AA2.02	Dropped Control Rod / 1	2.7	2.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Signal inputs to rod control system
024AK2.04	Emergency Boration / 1	2.6	2.5	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Pumps
051AG2.4.46	Loss of Condenser Vacuum / 4	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to verify that the alarms are consistent with the plant conditions.
060AK1.04	Accidental Gaseous Radwaste Rel. / 9	2.5	3.7	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Calculation of offsite doses due to a release from the power plant
WE01EA1.2	Rediagnosis / 3	3.3	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Operating behavior characteristics of the facility.
WE10EK3.4	Natural Circ. With Seam Void/ 4	3.4	3.7	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	RO or SRO function within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.
we15EG2.4.30	Containment Flooding / 5	2.7	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of events related to system operations/status that must be reported to internal orginizations or outside agencies.
WE16EA2.2	High Containment Radiation / 9	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

ES-401 PWR Examination Outline Form ES-401-2
Plant Systems - Tier 2/Group 1 (RO) / ~~SRO~~)

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		R										003 K2.02	2.5	
004 Chemical and Volume Control			R									004 K3.07	3.8	
005 Residual Heat Removal				R	R							005 K4.06, 005 K5.09	2.7/3.2	
006 Emergency Core Cooling						R						006 K6.10	2.6	
007 Pressurizer Relief/Quench Tank										R		007 A4.01	2.7	
008 Component Cooling Water									R	R		008 A3.04, 008 A4.07	2.9/2.9	
010 Pressurizer Pressure Control					R							010 K5.02	2.6	
012 Reactor Protection											R	012 G2.2.25	3.2	
013 Engineered Safety Features Actuation						R					R	013 G2.4.46, 013 K6.01	4.2/2.7	
022 Containment Cooling				R								022 K4.04	2.8	
025 Ice Condenser														
026 Containment Spray		R					R					026 A1.05, 026 K2.02	3.1/2.7	
039 Main and Reheat Steam								R				039 A2.05	3.3	
059 Main Feedwater								~~R~~				059 A2.01, 059 A2.11	3.4/3.0	
061 Auxiliary/Emergency Feedwater	R											061 K1.05	2.6	
062 AC Electrical Distribution							R					062 A1.03	2.5	
063 DC Electrical Distribution	R											063 K1.02	2.7	
064 Emergency Diesel Generator	R					R						064 K1.03, 064 K6.08	3.6/3.2	
073 Process Radiation Monitoring					R							073 K5.01	2.5	
076 Service Water		R								R		076 A4.04, 076 K2.04	3.5/2.5	
078 Instrument Air									R			078 A3.01	3.1	
103 Containment							R					103 A1.01	3.7	
K/A Category Point Totals:	3	3	1	2	3	3	3	3	2	3	2	Group Point Total:		28/5

T2G1 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
003K2.02	Reactor Coolant Pump	2.5	2.6	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	CCW pumps
004K3.07	Chemical and Volume Control	3.8	4.1	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	PZR level and pressure
005K4.06	Residual Heat Removal	2.7	3.0	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Function of RHR pump miniflow recirculation
005K5.09	Residual Heat Removal	3.2	3.4	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Dilution and boration considerations
006K6.10	Emergency Core Cooling	2.6	2.8	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Valves
007A4.01	Pressurizer Relief/Quench Tank	2.7	2.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	PRT spray supply valve
008A3.04	Component Cooling Water	2.9	3.2	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Requirements on and for the CCWS for different conditions of the power plant
008A4.07	Component Cooling Water	2.9	2.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Control of minimum level in the CCWS surge tank
010K5.02	Pressurizer Pressure Control	2.6	3.0	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Constant enthalpy expansion through a valve Make question plant specific; not GFES
012G2.2.25	Reactor Protection	3.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits.
013G2.4.46	Engineered Safety Features Actuation	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to verify that the alarms are consistent with the plant conditions.

T2G1 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
013K6.01	Engineered Safety Features Actuation	2.7	3.1	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Sensors and detectors
022K4.04	Containment Cooling	2.8	3.1	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Cooling of control rod drive motors
026A1.05	Containment Spray	3.1	3.4	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Chemical additive tank level and concentration For example, at Turkey Point NaOH added to cnmt sump, where sump equiv to "tank"
026K2.02	Containment Spray	2.7	2.9	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	MOVs
039A2.05	Main and Reheat Steam	3.3	3.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Increasing steam demand, its relationship to increases in reactor power
059A2.01	Main Feedwater	3.4	3.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Feedwater actuation of AFW system
059A2.11	Main Feedwater	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Failure of feedwater control system
061K1.05	Auxiliary/Emergency Feedwater	2.6	2.8	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Condensate system
062A1.03	AC Electrical Distribution	2.5	2.8	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Effect on instrumentation and controls of switching power supplies
063K1.02	DC Electrical Distribution	2.7	3.2	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	AC electrical system
064K1.03	Emergency Diesel Generator	3.6	4.0	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	Diesel fuel oil supply system

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:	
064K6.08	Emergency Diesel Generator	3.2	3.3	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Fuel oil storage tanks	
073K5.01	Process Radiation Monitoring	2.5	3.0	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Radiation theory, including sources, types, units and effects	*
076A4.04	Service Water	3.5	3.5	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Emergency heat loads	
076K2.04	Service Water	2.5	2.6	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	Reactor building closed cooling water	
078A3.01	Instrument Air	3.1	3.2	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	Air pressure	*
103A1.01	Containment	3.7	4.1	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Containment pressure, temperature and humidity	*

ES-401 PWR Examination Outline Form ES-401-2
Plant Systems - Tier 2/Group 2 (RO / SRO)

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			R									001K3.02	3.4	
002 Reactor Coolant														
011 Pressurizer Level Control														
014 Rod Position Indication														
015 Nuclear Instrumentation														
016 Non-nuclear Instrumentation														
017 In-core Temperature Monitor														
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control		R										028K2.01 (REJECTED)	2.5	
029 Containment Purge														
033 Spent Fuel Pool Cooling				R								033K4.04	2.7	
034 Fuel Handling Equipment														
035 Steam Generator														
041 Steam Dump/Turbine Bypass Control											R	041G2.2.42	3.9	
045 Main Turbine Generator					R							045K5.18	2.7	
055 Condenser Air Removal														
056 Condensate								R				056A2.04	2.6	
068 Liquid Radwaste						R						068K6.10	2.5	
071 Waste Gas Disposal														
072 Area Radiation Monitoring							R					072A1.01	3.4	
075 Circulating Water														
079 Station Air	R											079K1.01	3.0	
086 Fire Protection										R		086A4.01	3.3	
K/A Category Point Totals:	1	1	1	1	1	1	1	1	0	1	1	Group Point Total:		10/3

T2G2 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
001K3.02	Control Rod Drive	3.4	3.5	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	RCS
~~028K2.01~~	Hydrogen Recombiner and Purge Control REJECTED and replaced w/ 028 K3.01	2.5	2.8	☐	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	~~Hydrogen recombiners~~
033K4.04	Spent Fuel Pool Cooling	2.7	2.9	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	☐	Maintenance of spent fuel pool radiation
041G2.2.42	Steam Dump/Turbine Bypass Control	3.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
045K5.18	Main Turbine Generator	2.7	3.2	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	☐	Purpose of low-power reactor trips (limited to 25% power)
056A2.04	Condensate	2.6	2.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Loss of condensate pumps
068K6.10	Liquid Radwaste	2.5	2.9	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	☐	Radiation monitors
072A1.01	Area Radiation Monitoring	3.4	3.6	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐	Radiation levels
079K1.01	Station Air	3.0	3.1	☑	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	IAS
086A4.01	Fire Protection	3.3	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	Fire water pumps

ES-401 PWR Examination Outline Form ES-401-2
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1 (RO / SRO)

E/APE # / Name / Safety Function	K 1	K 2	K 3	A 1	A 2	G	K/A Topic(s)	IR	#
000007 (BW/E02&E10; CE/E02) Reactor Trip - Stabilization - Recovery / 1						S	007EG2.4.34	4.1	
000008 Pressurizer Vapor Space Accident / 3						S	008AG2.4.18	4.0	
000009 Small Break LOCA / 3									
000011 Large Break LOCA / 3									
000015/17 RCP Malfunctions / 4									
000022 Loss of Rx Coolant Makeup / 2									
000025 Loss of RHR System / 4									
000026 Loss of Component Cooling Water / 8									
000027 Pressurizer Pressure Control System Malfunction / 3						S	027AG2.4.49	4.4	
000029 ATWS / 1									
000038 Steam Gen. Tube Rupture / 3									
000040 (BW/E05; CE/E05; W/E12) Steam Line Rupture - Excessive Heat Transfer / 4									
000054 (CE/E06) Loss of Main Feedwater / 4									
000055 Station Blackout / 6									
000056 Loss of Off-site Power / 6					S		056AA2.43	4.1	
000057 Loss of Vital AC Inst. Bus / 6									
000058 Loss of DC Power / 6									
000062 Loss of Nuclear Svc Water / 4					S		062AA2.05	2.5	
000065 Loss of Instrument Air / 8					S		065AA2.01	3.2	
W/E04 LOCA Outside Containment / 3									
W/E11 Loss of Emergency Coolant Recirc. / 4									
BW/E04; W/E05 Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4									
000077 Generator Voltage and Electric Grid Disturbances / 6									
K/A Category Totals:					3	3	Group Point Total:		18/6

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
007EG2.4.34	Reactor Trip - Stabilization - Recovery / 1	4.2	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects
008AG2.4.18	Pressurizer Vapor Space Accident / 3	3.3	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the specific bases for EOPs.
027AG2.4.49	Pressurizer Pressure Control System Malfunction / 3	4.6	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.
056AA2.43	Loss of Off-site Power / 6	3.9	4.1	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Occurrence of a turbine trip
062AA2.05	Loss of Nuclear Svc Water / 4	2.4	2.5	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	The normal values for SWS-header flow rate and the flow rates to the components cooled by the SWS
065AA2.01	Loss of Instrument Air / 8	2.9	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Cause and effect of low-pressure instrument air alarm

ES-401 PWR Examination Outline Form ES-401-2

Emergency and Abnormal Plant Evolutions - Tier 1/Group 2 (RO / SRO)

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									
000003 Dropped Control Rod / 1									
000005 Inoperable/Stuck Control Rod / 1									
000024 Emergency Boration / 1						S	024AG2.1.32	4.0	
000028 Pressurizer Level Malfunction / 2									
000032 Loss of Source Range NI / 7						S	032AG2.4.31	4.1	
000033 Loss of Intermediate Range NI / 7					S		033AA2.06	2.8	
000036 (BW/A08) Fuel Handling Accident / 8									
000037 Steam Generator Tube Leak / 3									
000051 Loss of Condenser Vacuum / 4					S		051AA2.02	4.1	
000059 Accidental Liquid RadWaste Rel. / 9									
000060 Accidental Gaseous Radwaste Rel. / 9									
000061 ARM System Alarms / 7									
000067 Plant Fire On-site / 8									
000068 (BW/A06) Control Room Evac. / 8									
000069 (W/E14) Loss of CTMT Integrity / 5									
000074 (W/E06&E07) Inad. Core Cooling / 4									
000076 High Reactor Coolant Activity / 9									
W/EO1 & E02 Rediagnosis & SI Termination / 3									
W/E13 Steam Generator Over-pressure / 4									
W/E15 Containment Flooding / 5									
W/E16 High Containment Radiation / 9									
BW/A01 Plant Runback / 1									
BW/A02&A03 Loss of NNI-X/Y / 7									
BW/A04 Turbine Trip / 4									
BW/A05 Emergency Diesel Actuation / 6									
BW/A07 Flooding / 8									
BW/E03 Inadequate Subcooling Margin / 4									
BW/E08; W/E03 LOCA Cooldown - Depress. / 4									
BW/E09; CE/A13; W/E09&E10 Natural Circ. / 4									
BW/E13&E14 EOP Rules and Enclosures									
CE/A11; W/E08 RCS Overcooling - PTS / 4									
CE/A16 Excess RCS Leakage / 2									
CE/E09 Functional Recovery									
K/A Category Point Totals:					2	2	Group Point Total:		9/4

SRO T1G2 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
024AG2.1.32	Emergency Boration / 1	3.8	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to explain and apply all system limits and precautions.
032AG2.4.31	Loss of Source Range NI / 7	4.2	4.1	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of annunciators alarms, indications or response procedures
033AA2.06	Loss of Intermediate Range NI / 7	2.3	2.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Cause of failure of an intermediate-range channel
051AA2.02	Loss of Condenser Vacuum / 4	3.9	4.1	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Conditions requiring reactor and/or turbine trip

ES-401 PWR Examination Outline Form ES-401-2
Plant Systems - Tier 2/Group 1 (RO / SRO)

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														
004 Chemical and Volume Control														
005 Residual Heat Removal														
006 Emergency Core Cooling														
007 Pressurizer Relief/Quench Tank								S				007A2.03	3.9	
008 Component Cooling Water								S				008A2.08	2.7	
010 Pressurizer Pressure Control											S	010G2.2.40	4.7	
012 Reactor Protection														
013 Engineered Safety Features Actuation														
022 Containment Cooling														
025 Ice Condenser														
026 Containment Spray											S	026G2.4.47	4.2	
039 Main and Reheat Steam														
059 Main Feedwater														
061 Auxiliary/Emergency Feedwater														
062 AC Electrical Distribution														
063 DC Electrical Distribution														
064 Emergency Diesel Generator														
073 Process Radiation Monitoring								S				073A2.02	3.2	
076 Service Water														
078 Instrument Air														
103 Containment														
K/A Category Point Totals:								3			2	Group Point Total:		28/5

SRO T2G1 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
007A2.03	Pressurizer Relief/Quench Tank	3.6	3.9	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Overpressurization of the PZR
008A2.08	Component Cooling Water	2.5	2.7	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Effects of shutting (automatically or otherwise) the isolation valves of the letdown cooler
010G2.2.40	Pressurizer Pressure Control	3.4	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to apply technical specifications for a system.
026G2.4.47	Containment Spray	4.2	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.
073A2.02	Process Radiation Monitoring	2.7	3.2	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Detector failure

ES-401 PWR Examination Outline Form ES-401-2
Plant Systems - Tier 2/Group 2 (RO / SRO)

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														
002 Reactor Coolant														
011 Pressurizer Level Control								S				011 A2.10	3.6	
014 Rod Position Indication														
015 Nuclear Instrumentation								S				015 A2.05	3.8	
016 Non-nuclear Instrumentation														
017 In-core Temperature Monitor														
027 Containment Iodine Removal														
028 Hydrogen Recombiner and Purge Control														
029 Containment Purge											S	029 G2.1.30	4.0	
033 Spent Fuel Pool Cooling														
034 Fuel Handling Equipment														
035 Steam Generator														
041 Steam Dump/Turbine Bypass Control														
045 Main Turbine Generator														
055 Condenser Air Removal														
056 Condensate														
068 Liquid Radwaste														
071 Waste Gas Disposal														
072 Area Radiation Monitoring														
075 Circulating Water														
079 Station Air														
086 Fire Protection														
K/A Category Point Totals:								2			1	Group Point Total:		10/3

SRO T2G2 PWR EXAMINATION OUTLINE

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
011A2.10	Pressurizer Level Control	3.4	3.6	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Failure of PZR level instrument - high
015A2.05	Nuclear Instrumentation	3.3	3.8	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	Core void formation
029G2.1.30	Containment Purge	4.4	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to locate and operate components, including local controls.

Facility: Turkey Point Date of Exam: November 2010 RO + SRO

Category	K/A #	Topic	RO IR	RO #	SRO-Only IR	SRO-Only #
1. Conduct of Operations RO	2.1.1	Knowledge of conduct of Ops req'ts (RO)	3.8			
RO	2.1.18	Ability to make accurate, clear logs, records, etc.	3.6			
RO	2.1.23	Perform specific sys/integ plt proc's all modes	4.3			
	2.1.					
SRO	2.1.38	Station req'ts for verbal communication (SRO)			3.8	
	2.1.					
	Subtotal		(3)		(1)	
2. Equipment Control RO	2.2.3	Differences between units: design, proc's, operation	3.8			
RO	2.2.42	System parameters entry conditions Tech Specs	3.9			
RO	2.2.43	Process to track inoperable alarms	3.0			
	2.2.					
SRO	2.2.1	Pre-startup proc's, including proc's for reactivity			4.4	
SRO	2.2.17	Managing Maint. activities during pwr ops.			3.8	
	Subtotal		(3)		(2)	
3. Radiation Control RO	2.3.4	Rad exposure limits during normal/emerg	3.2			
RO	2.3.7	Comply w/ RWP during normal/abnormal	3.5			
	2.3.					
SRO	2.3.12	Rad safety principles pertaining to LO duties			3.7	
SRO	2.3.14	Rad/Contam hazards during n/a/ or emerg			3.8	
	2.3.					
	Subtotal		(2)		(2)	
4. Emergency Procedures / Plan RO	2.4.11	AOPs	4.0			
RO	2.4.13	Crew Roles/Resp during EOP usage	4.0			
	2.4.					
	2.4.					
SRO	2.4.32	Operator response to loss of all annunciators			4.0	
SRO	2.4.4	Abnormal indications for parameters entry AOP/EOP			4.7	
	Subtotal		(2)		(2)	
Tier 3 Point Total			10	10	7	7

RO **T3 PWR EXAMINATION OUTLINE**

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.1	Conduct of operations	3.8	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of conduct of operations requirements.
G2.1.18	Conduct of operations	3.6	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to make accurate, clear and concise logs, records, status boards and reports. *
G2.1.23	Conduct of operations	4.3	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform specific system and integrated plant procedures during all modes of plant operation.
G2.2.3	Equipment Control	3.8	3.9	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	(multi-unit license) Knowledge of the design, procedural and operational differences between units.
G2.2.42	Equipment Control	3.9	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize system parameters that are entry-level conditions for Technical Specifications
G2.2.43	Equipment Control	3.0	3.3	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the process used to track inoperable alarms
G2.3.4	Radiation Control	3.2	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiation exposure limits under normal and emergency conditions
G2.3.7	Radiation Control	3.5	3.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to comply with radiation work permit requirements during normal or abnormal conditions
G2.4.11	Emergency Procedures/Plans	4.0	4.2	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of abnormal condition procedures.
G2.4.13	Emergency Procedures/Plans	4.0	4.6	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of crew roles and responsibilities during EOP usage. *

KA	NAME / SAFETY FUNCTION:	IR RO	IR SRO	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	TOPIC:
G2.1.38	Conduct of operations	3.7	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the stations requirements for verbal communication when implamenting procedures
G2.2.1	Equipment Control	4.5	4.4	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity. *
G2.2.17	Equipment Control	2.6	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of the process for managing maintenance activities during power operations.
G2.3.12	Radiation Control	3.2	3.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiological safety principles pertaining to licensed operator duties
G2.3.14	Radiation Control	3.4	3.8	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities
G2.4.32	Emergency Procedures/Plans	3.6	4.0	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Knowledge of operator response to loss of all annunciators.
G2.4.4	Emergency Procedures/Plans	4.5	4.7	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☑	Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

Facility: Turkey Point Units 3 & 4	Date of Examination: 10/25/2010
Exam Level: RO	Operating Test Number: 2010-301

Administrative Topic (See Note)	Type Code (See Note)	Describe Activity to be performed
A.1 Conduct of Operations	CR, N	Calculate a Manual VCT Makeup 2.1.25 RO 3.9 SRO 4.2
N/A	N/A	N/A
A.2 Equipment Control	C, N	Perform a CCW In Service Test 2.2.36 RO 3.1
A.3 Radiation Control	CR, M	Determine Dose Rates and Radiological Requirements From a Survey Map 2.3.7 RO 3.5 SRO 3.6
A.4 - RO Emergency Plan	CR, N	Perform a Critical Safety Function Assessment 2.4.21 RO 4.0

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

* Types and Codes (C) Control Room (S) Simulator (CR) Classroom
(D)irect from bank (≤3 for ROs, ≤4 for SROs)
(N)ew or (M)odified from bank (≥1)
(P)revious 2 Exams (≤1 Randomly selected)

rec'd 6/16/10

Section A

RO Admin

R.A.1

Calculate a Manual Makeup to the VCT

- 0-OP-046, CVCS - Boron Concentration Control
- Unit 3 Plant Curve Book Section 3

The examinee will perform a calculation for a manual blend to the VCT to raise VCT level to 37% and maintain RCS boron concentration constant using section 5.4 of 0-OP-046, CVCS - Boron Concentration Control and the Unit 3 Plant Curve Book Section 3.

R.A.2

Perform a CCW In Service Test

- 3-OSP-030.1 Component Cooling Water Pump Inservice Test

The examinee will complete the Quarterly Group A test using 3-OSP-030.1 Component Cooling Water Pump Inservice Test starting at step 7.1.19 for the 3A CCW pump. The examinee will discriminate data for the 3A CCW pump as meeting or not meeting "Acceptance Criteria".

A.3

Determine Allowable Stay Time & Determine Radiological Requirements

- Radiation Work Permit 08-005, "Radiological Controlled Area, Operations Department, Plant Operations"
- PTN Unit 3 Pipe and Valve Room Monthly Survey Map
- PTN Unit 4 Pipe and Valve Room Monthly Survey Map

The examinee will review an existing outage scenario in preparation for briefing a Non-Licenced Operator entering a Contaminated Area and make a calculation for stay time, assess the minimum requirement for protective clothing, identify the minimum required dosimetry, identify the area of highest surface contamination, and identify the area where the operator should stand in the event that he/she is required to wait there

R.A.4

Perform a Critical Safety Function Assessment

- 3-EOP-F-0, Critical Safety Function Status Trees
- 0-ADM-211 Emergency and Off-Normal Operating Procedure Usage

The examinee will review an emergency scenario and recommend, based 3-EOP-FR-P.1 Response to Imminent Pressurized Thermal Shock Condition criteria and from the rules of usage in 0-ADM-211 Emergency and Off-Normal Operating Procedure Usage, that transition to 3-EOP-FR-P.1 Response to Imminent Pressurized Thermal Shock Condition, is required

Facility: Turkey Point Units 3 & 4 Date of Examination: 10/25/2010

Exam Level: SRO (U) & (I) Operating Test Number: 2010-301

Administrative Topic (See Note)	Type Code (See Note)	Describe Activity to be performed
A.1.a Conduct of Operations	CR, N	Review the Calculation for a Manual VCT Makeup 2.1.25 SRO 4.2
A.1.b Equipment Control	CR, D	Determine Contingency Actions Required During Reduced Inventory Operations 2.1.2 SRO 4.4.
A.2 Equipment Control	CR, N	Determine Required Action For CCW Test 2.2.12 SRO 4.1
A.3 Radiation Control	CR, M	Determine Dose Rates and Radiological Requirements From a Survey Map 2.3.7 RO 3.5 SRO 3.6
A.4 - SRO Emergency Plan	CR, N	Classify Event and Determine PARS 2.4.41 SRO 4.6

NOTE: All items (5 total) are required for SROs. RO applicants require only 4 items unless they are retaking only the administrative topics, when 5 are required.

* Types and Codes (C) Control Room (S) Simulator (CR) Classroom
(D)irect from bank (≤3 for ROs, ≤4 for SROs)
(N)ew or (M)odified from bank (≥1)
(P)revious 2 Exams (≤1 Randomly selected)

Rec'd 6/16/10

Section A

SRO Admin

S.A.1

Review a Manual Makeup to the VCT Calculation

- 0-OP-046, CVCS - Boron Concentration Control
- Unit 3 Plant Curve Book Section 3

The examinee will review an existing VCT Manual Makeup calculation with embedded errors. The examinee will identify all errors, and make corrections to all errors. When complete, the examinee will show all errors and corrections to the Evaluator.

S.A.1.b

Determine Contingency Actions

- 0-ADM-051, Outage Risk Assessment and Control
- 0-ADM-200 Conduct of Operations

The examinee will review an existing outage scenario as Shift Manager during Reduced Inventory and identify the required contingency action contained in 0-ADM-051, Outage Risk Assessment and Control based on the loss of the 4A EDG.

S.A.2

Determine Required Action For CCW Test

- 3-OSP-030.1 Component Cooling Water Pump Inservice Test
- Technical Specifications TURKEY POINT - UNITS 3 & 4
- 0-ADM-536 Technical Specification Bases Control Program

The examinee will review the Quarterly Group A test using 3-OSP-030.1 Component Cooling Water Pump Inservice Test for the 3A CCW pump. The examinee will discriminate data for the 3A CCW pump as meeting or not meeting "Acceptance Criteria". The examinee will determine that the acceptance criteria for 3-OSP-30.1 "Component Cooling Water Pump Inservice Test" are NOT met and that 3A CCW pump is INOPERABLE and entry into Technical Specification LCO 3.7.2 Action b is required.

A.3

Determine Allowable Stay Time & Determine Radiological Requirements

- Radiation Work Permit 08-005, "Radiological Controlled Area, Operations Department, Plant Operations"
- PTN Unit 3 Pipe and Valve Room Monthly Survey Map
- PTN Unit 4 Pipe and Valve Room Monthly Survey Map

The examinee will review an existing outage scenario in preparation for briefing a Non-Licenced Operator entering a Contaminated Area and make a calculation for stay time, assess the minimum requirement for protective clothing, identify the minimum required dosimetry, identify the area of highest surface contamination, and identify the area where the operator should stay.

Classify the Event

S.A.4

- 0-EPIP-20101, DUTIES OF EMERGENCY COORDINATOR
- 0-EPIP- 20134, Offsite Notifications and Protective Action Recommendations

As Emergency Coordinator, the examinee will review an emergency scenario and make an Emergency Plan Classification using 0-EPIP-20101, DUTIES OF EMERGENCY COORDINATOR. After the classification is made, the examinee will complete the Florida State Notification Form using 0-EPIP- 20134, Offsite Notifications and Protective Action Recommendations.

Facility: Turkey Point
Exam Level (circle one): RO

Date of Examination: 10/25/2010
Operating Test No.: 2010-301

Control Room Systems@ (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)		
System / JPM Title	Type Code*	Safety Function
a Respond to a Rod Control Failure 001 A2.14 RO 3.7 SRO 3.9	A, M	1
b Align Safety Injection for Hot Leg Recirc EPE011 EA1.11 RO 4.2 SRO 4.2	L, D	2
c Depressurize the RCS using a PORV EPE038 EA1.04 RO 4.3 SRO 4.1	A, N	3
d Respond to loss of RHR 005 A4.01 RO 3.6 SRO 3.4	A, L, D	4 P
e Restart Containment Normal Coolers 022 A4.01 RO 3.6 SRO 3.6	N	5
f Transfer Load From UAT to SUT 062 A4.01 RO 3.3 SRO 3.1	M	6
g Place N-42 Power Range Drawer in Service 015 A4.02 RO 3.9 SRO 3.9	M	7
h Shutdown Containment Purge 029 A3.01 RO 3.8 SRO 4.0	A, N	8
In-Plant Systems@ (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i Recover from a Unit 4 EDG Auto Start Failure EPE 055 EA1.02 RO 4.3 SRO 4.4	A, E, M	6
j Control SG Level Locally APE 054 AA1.01 RO 4.5 SRO 4.4	E, D	4S
k Perform Gaseous Radwaste Release (SNPO) 071 A4.26 RO 3.1 SRO 3.9	M, R	9

@ All control room (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

rec'd 6/16/10

Facility: Turkey Point
Exam Level (circle one): SRO-I

Date of Examination: 10/25/2010
Operating Test No.: 2010-301

Control Room Systems@ (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a Respond to a Rod Control Failure 001 A2.14 RO 3.7 SRO 3.9	A, M	1
b Align Safety Injection for Hot Leg Recirc EPE011 EA1.11 RO 4.2 SRO 4.2	L, D	2
c Depressurize the RCS using a PORV EPE038 EA1.04 RO 4.3 SRO 4.1	A, N	3
d Respond to loss of RHR 005 A4.01 RO 3.6 SRO 3.4	A, L, D	4 P
e Restart Containment Normal Coolers 022 A4.01 RO 3.6 SRO 3.6	N	5
f N/A	N/A	N/A
g Place N-42 Power Range Drawer in Service 015 A4.02 RO 3.9 SRO 3.9	M	7
h Shutdown Containment Purge 029 A3.01 RO 3.8 SRO 4.0	A, N	8
In-Plant Systems@ (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i Recover from a Unit 4 EDG Auto Start Failure EPE 055 EA1.02 RO 4.3 SRO 4.4	A, E, M	6
j Control SG Level Locally APE 054 AA1.01 RO 4.5 SRO 4.4	E, D	4S
k Perform Gaseous Radwaste Release (SNPO) 071 A4.26 RO 3.1 SRO 3.9	M, R	9

@ All control room (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

rec'd 6/16/10

Facility: Turkey Point
Exam Level (circle one): SRO-U

Date of Examination: 10/25/2010
Operating Test No.: 2010-301

Control Room Systems@ (8 for RO; 7 for SRO-I; 2 or 3 for SRO-U)

System / JPM Title	Type Code*	Safety Function
a N/A	N/A	N/A
b N/A	N/A	N/A
c N/A	N/A	N/A
d Respond to loss of RHR 005 A4.01 RO 3.6 SRO 3.4	A, L, D	4 P
e Restart Containment Normal Coolers 022 A4.01 RO 3.6 SRO 3.6	N	5
f N/A	N/A	N/A
g N/A	N/A	N/A
h Shutdown Containment Purge 029 A3.01 RO 3.8 SRO 4.0	A, N	8
In-Plant Systems@ (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)		
i Recover from a Unit 4 EDG Auto Start Failure EPE 055 EA1.02 RO 4.3 SRO 4.4	A, E, M	6
j N/A	N/A	N/A
k Perform Gaseous Radwaste Release (SNPO) 071 A4.26 RO 3.1 SRO 3.9	M, R	9

@ All control room (and in-plant) systems must be different and serve different safety functions; in-plant systems and functions may overlap those tested in the control room.

* Type Codes	Criteria for RO / SRO-I / SRO-U
(A)lternate path	4-6 / 4-6 / 2-3
(C)ontrol room	
(D)irect from bank	≤ 9 / ≤ 8 / ≤ 4
(E)mergency or abnormal in-plant	≥ 1 / ≥ 1 / ≥ 1
(L)ow-Power	≥ 1 / ≥ 1 / ≥ 1
(N)ew or (M)odified from bank including 1(A)	≥ 2 / ≥ 2 / ≥ 1
(P)revious 2 exams	≤ 3 / ≤ 3 / ≤ 2 (randomly selected)
(R)CA	≥ 1 / ≥ 1 / ≥ 1
(S)imulator	

Rec'd 10/16/10

Section B

JPM A

Respond to a Rod Control Failure

- 3-ONOP-028, Reactor Control System Malfunction
- 3-ARP-097.CR, Control Room Annunciator Response (annunciator panel B)
- 3-GOP-301 Hot Standby to Power Operation

The examinee will withdraw control rods while in the Intermediate Range to raise Reactor power. While withdrawing control rods, a continuous control rod withdrawal will occur requiring a manual Reactor trip.

JPM B

Align Safety Injection for Hot Leg Recirc

- 3-EOP-ES-1.4, Transfer To Hot Leg Recirculation

During an emergency situation, the examinee will transfer from Cold Leg Recirculation to Hot Leg Recirculation using 3-EOP-ES-1.4, Transfer To Hot Leg Recirculation

JPM C

Depressurize the RCS using a PORV

- 3-EOP-E-3 Steam Generator Tube Rupture

During an emergency situation, the examinee will depressurize the RCS using 3-EOP-E-3 Steam Generator Tube Rupture using the PORV's. Given the initial simulator setup, the most likely termination point of the depressurization will be based on the equalization of the RCS to the ruptured Steam Generator pressure.

JPM D

Respond to loss of RHR

- 3-ONOP-050, LOSS OF RHR
- 3-ARP-097.CR

While in MODE 5, the examinee respond to plant conditions when the running RHR trips. The examinee will re-establish RHR flow using 3-ONOP-050, LOSS OF RHR and restore RHR flow control to automatic.

JPM E

Restart Containment Normal Coolers

- 3-EOP-E-0 Reactor Trip or Safety Injection Attachment 3 Prompt Action Verifications

During an emergency situation with a Safety Injection, the examinee will reset Safety Injection and Contamination Phase A, then reset and start the Normal Containment Coolers using 3-EOP-E-0 Reactor Trip or Safety Injection Attachment 3 Prompt Action Verifications to allow continued reactor Coolant Pump operations.

JPM F

Transfer Load From UAT to SUT

- 3-OP-005, 4160 Volt Buses A, B and D
- 3-GOP-103 Power Operation to Hot Standby

The examinee will transfer Station Services from the Unit Auxiliary to the Startup Transformers using 3-OP-005, 4160 Volt Buses A, B and D.

JPM G

Place N-42 Power Range Drawer in Service

- 3-OSP-059.4, "Power Range Nuclear Instrumentation Analog Channel Operational Test"

During the performance of a Channel Operational Test, the examinee will place N-42 Power Range drawer in service using 3-OSP-059.4, "Power Range Nuclear Instrumentation Analog Channel Operational Test"

JPM H

Shutdown Containment Purge

- 3-ONOP-067 Radioactive Effluent Release
- 3-ARP-097.CR Control Room Annunciator Response

While in MODE 5, the examinee respond to plant conditions when a high radiation condition develops. The examinee will need to transition to 3-ONOP-067 Radioactive Effluent Release and manually close the Containment Purge Isolation valves and turn off the Containment Purge fans due to the failure of the Containment Isolation relays to actuate.

JPM I

Recover from a Unit 4 EDG Auto Start Failure

- 4-ONOP-023.2, Emergency Diesel Generator Failure

During a Loss of Offsite Power, the examinee will respond as a Non-Licensed Operator to locally start the 4A EDG and to locally energize the 4A 4kV bus.

JPM J

Control SG Level Locally

- 3-ONOP-075, Auxiliary Feedwater System Malfunction Attachment 3

During a Loss of Offsite Power, the examinee will respond as a Non-Licensed Operator to locally operate Auxiliary Feed Control valve CV-3-2816 and control S/G LEVEL in using Attachment 3 of 3-ONOP-075.

JPM K

Perform Gaseous Radwaste Release (SNPO)

- 0-NCOP-004, Attachment 1, Gas Decay Tank Release Permit
- 0-OP-061.14, Waste Gas Disposal System Controlled Radioactive Gas Release

As a Non-Licensed Operator, the examinee will to locally initiate and terminate Waste Gas Release using 0-OP-061.14, Waste Gas Disposal System Controlled Radioactive Gas Release.