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Administrative Topics Outline

Facility: Turkey Point Units 3 & 4

Date of Examination: 2009

Exam Level: RO

Operating Test Number: 2009-301

Administrative Topic (See Note)	Type Code (See Note)	Describe Activity to be performed
A.1 Conduct of Operations	CR, N	Perform a Dilution calculation for a Unit Power change from 60-100% (2.1.43 Ability to use procedures to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc. (CFR: 41.10 / 43.6 / 45.6) IMPORTANCE RO 4.1 SRO 4.3
		Perform 3-OSP-059.10, Perform A QPTR Calculation. (2.2.12
A.2 Equipment Control	CR, D	Knowledge of surveillance procedures. (CFR: 41.10 / 45.13) IMPORTANCE RO 3.7 SRO 4.1
A.3 Radiation Control	CR, N	Determine Allowable Stay Time & Determine Radiological Requirements for HCV-4-758 Surveillance. (2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. (CFR: 41.12 / 45.10) IMPORTANCE RO 3.5 SRO 3.6)
A.4 - RO Emergency Plan	CR, N	Identify the correct CSF Priority based on Unit conditions. (2.4.22 Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations. (CFR: 41.7 / 41.10 / 43.5 / 45.12) IMPORTANCE RO 3.6 SRO 4.4)

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)

Facility: Turkey Point Units 3 & 4

Date of Examination: 2009

Exam Level: SRO (U) & (I)

Operating Test Number: 2009-301

Administrative Topic (See Note)	Type Code (See Note)	Describe Activity to be performed
A.1.a Conduct of Operations	CR, N	Verify a Dilution calculation for a Unit Power change from 60- 100% (2.1.43 Ability to use procedures to determine the effects on reactivity of plant changes, such as reactor coolant system temperature, secondary plant, fuel depletion, etc. (CFR: 41.10 / 43.6 / 45.6) IMPORTANCE RO 4.1 SRO 4.3
A.1.b Conduct of Operations	CR, N	Perform Review of 0-OSP-205, Verification of Administratively Controlled Valves, Locks, and Switches (2.1.29 Knowledge of how to conduct system lineups, such as valves, breakers, switches, etc. (CFR: 41.10 / 45.1 / 45.12) IMPORTANCE RO 4.1 SRO 4.0
A.2 Equipment Control	CR, D	Perform 3-OSP-059.10, Perform A QPTR Calculation. (2.2.12 Knowledge of surveillance procedures. (CFR: 41.10 / 45.13) IMPORTANCE RO 3.7 SRO 4.1
A.3 Radiation Control	CR,N	Determine Allowable Stay Time & Determine Radiological Requirements for HCV-4-758 Surveillance. (2.3.7 Ability to comply with radiation work permit requirements during normal or abnormal conditions. (CFR: 41.12 / 45.10) IMPORTANCE RO 3.5 SRO 3.6)
A.4 - SRO Emergency Plan	CR, M	Classify Plant Event recommend PARS and complete SNF. 2.4.41 Knowledge of the emergency action level thresholds and classifications. (CFR: 41.10 / 43.5 / 45.11) IMPORTANCE RO 2.9 SRO 4.6
NOTE: All items (5 total) the administrative topics,		Ds. RO applicants require only 4 items unless they are retaking only

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

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Control Room/In-Plant Systems Outline

Form ES-301-2

Facility: <u>Turkey Point</u> Exam Level (circle one): RO	Date of Examination Operating Test No.:		
Control Room Systems [@] (8 for RO; 7 for SRO-I; 2 or 3 for	r SRO-U)		
System / JPM Title		Type Code*	Safety Function
a Respond to a Turbine Runback (Control Rods fail to in	A, N, S	1	
b Pressurizer Level Transmitter fails Low		N,S	2
c Align Safety Injection for Hot Leg Recirculation		A, D, L, S	4(P)
d Respond to a Source Range Nuclear Instrument Malf	unction (MODE 6)	D,E,S	7
e Purging the PRT to Reduce Oxygen or Hydrogen		M,S	5
f Initiate Containment Purge		D,L,M,S	8
g Fill Accumulator		N,S	3
h Perform EDG Normal Start Test.		A,M,S	6
In-Plant Systems [@] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-	-U)		
i Post Accident Hydrogen Monitoring/Place U-4 Post A Monitor in service as an NSO in the Auxiliary Bu		A,D,R,E	5
j TRIP and RESET AFW Pump "A" T&T Valve, MOV-64	459A	N	4(S)
 k AC Electrical Distribution/Swap from 4B Normal (4Y0 Inverter as an NSO. 	2) to B SPARE (4Y04)	N	6
@ All control room (and in-plant) systems must be of in-plant systems and functions may overlap those in-plant systems and functions			5,
* Type Codes		0 / SRO-I / SRO-I	J
 (A)Iternate path (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (L)ow-Power (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams (R)CA (S)imulator 	$\leq 9 \\ \geq 1 \\ \geq 1 \\ \geq 2 \\ \leq 3 / \leq 3 / \leq 2$	/ 4-6 / 2-3 / ≤ 8 / ≤ 4 / ≥ 1 / ≥ 1 / ≥ 1 / ≥ 1 / ≥ 2 / ≥ 1 (randomly selected / ≥ 1 / ≥ 1	d)

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Control Room/In-Plant Systems Outline

Form ES-301-2

Facility: <u>Turkey Point</u> Exam Level (circle one): SRO-I	Date of Examinatior Operating Test No.:		
Control Room Systems [@] (8 for RO; 7 for SRO-I; 2 or 3 for SF	RO-U)		
System / JPM Title		Type Code*	Safety Function
a Respond to a Turbine Runback (Control Rods fail to inse	ert).	A, N, S	1
b Pressurizer Level Transmitter fails Low		N,S	2
c Align Safety Injection for Hot Leg Recirculation		A, D, L, S	4(P)
d Respond to a Source Range Nuclear Instrumentation Ma	Ilfunction (Mode 6)	D,E,S	7
e			
f Initiate Containment Purge.		L,M,S	8
g Fill Accumulator		N,S	3
h Perform EDG Normal Start Test.	••••••••••••••••••••••••••••••••••••••	A,M,S	6
In-Plant Systems [@] (3 for RO; 3 for SRO-I; 3 or 2 for SRO-U)			
i Post Accident Hydrogen Monitoring/Place U-4 Post Acci Monitor in service as an NSO in the Auxiliary Buildin		A,D,R,E	5
j TRIP and RESET AFW Pump "A" T&T Valve, MOV-6459	A	N	4(S)
 AC Electrical Distribution/Swap from 4B Normal (4Y02) Inverter as an NSO. 	to B SPARE (4Y04)	N	6
@ All control room (and in-plant) systems must be different in-plant systems and functions may overlap those to the system of			S;
* Type Codes		0 / SRO-I / SRO-I	υ
 (A)Iternate path (C)ontrol room (D)irect from bank (E)mergency or abnormal in-plant (L)ow-Power (N)ew or (M)odified from bank including 1(A) (P)revious 2 exams 	≤ 9 ≥ 1 ≥ 1 ≥ 2	/ 4-6 / 2-3 / ≤ 8 / ≤ 4 / ≥ 1 / ≥ 1 / ≥ 1 / ≥ 1 / ≥ 2 / ≥ 1 (randomly selecte	d)
Ř)CA (S)imulator		/≥1/≥1	,

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Control Room/In-Plant Systems Outline

Form ES-301-2

Facility: <u>Turkey Point</u> Exam Level (circle one): SRO-U	Date of Examination: <u>2009</u> Operating Test No.: <u>2009-</u>	-
Control Room Systems [@] (8 for RO; 7 for SRO-I; 2 or 3 f	for SRO-U)	
System / JPM Title	Type Code*	Safety Function
a Respond to a Turbine Runback (Control Rods fail to	insert). A, N, S	1
b		
c Align Safety Injection for Hot Leg Recirculation	A, D, L, S	4(P)
d e		
f Initiate Containment Purge.		
	L,M,S	8
g h		
In-Plant Systems [@] (3 for RO; 3 for SRO-I; 3 or 2 for SR	,	
i Post Accident Hydrogen Monitoring/Place U-4 Post Monitor in service as an NSO in the Auxiliary E		5
j TRIP and RESET AFW Pump "A" T&T Valve, MOV-	6459A N	4(S)
k		
@ All control room (and in-plant) systems must be in-plant systems and functions may overlap th		ons;
* Type Codes	Criteria for RO / SRO-I / SRO)-U
(A)Iternate path (C)ontrol room	4-6 / 4-6 / 2-3	
(D)irect from bank (E)mergency or abnormal in-plant	≤ 9 / ≤ 8 / ≤ 4 ≥ 1 / ≥ 1 / ≥ 1	
(L)ow-Power (N)ew or (M)odified from bank including 1(A)	≥1/≥1/≥1 ≥2/≥2/≥1	
(P)revious 2 exams (R)CA	\leq 3 / \leq 3 / \leq 2 (randomly selec	ted)
(S)imulator	≥1/≥1/≥1	



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ES-401, Rev. 9

PWR Examination Outline

Form ES-401-2

	ey Point]		ofE	-		-									
Tier	Group	,	RO K/A Category Points SRO-Only Po										y Poi	nts				
		К 1	К 2	К 3	К 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	Totai		42	(G*	Total
1.	1	3	3	З				3	3			3	18		3	;	3	6
Emergency & Abnormal Plant	2	2	2	2		N/A		1	1	N	/A	1	9		2		2	4
Evolutions	Tier Totals	5	5	5				4	4			4	27		5		5	10
	1	3	3	2	2	2	3	2	2	3	з	3	28		3	:	2	5
2. Piant	2	1	1	1	1	0	1	1	1	1	1	1	10		2		1	3
Systems	Tier Totals	4	4	3	3	2	4	3	3	4	4	4	38		5		3	8
	nowledge and	d Abi	ilitie	s	1	1		2	:	3		4	10	1	2	3	4	7
(Categories					2	:	3	2	2	3	j - 1		1	2	2	2	1
3.	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. 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.	not apply at th not included o the elimination	e fac in the n of ir	outi napp	shou ine s ropri	id be hould ate M	dele d be : (/A si	adde tater	and ji id. R nents	ustifi efer 5.	ed; c to E\$	opera 5-401	itiona , Att	illy import achment 2	ant, s 2, for g	i te-s pe guidan	cific s ce reg	iysten Jardin	s that do is that ar
4.	not apply at th not included o	ie fac in the n of ir from	outi napp as m	shou ine s ropri any :	id be hould ate f syste	dele d be a (/A si ms a	adde tater Ind e	and ji id. R nents volut	ustifi efer 5. ions	ed; c to ES as p	opera 5-401 ossit	itiona , Att ple; s	achment 2 achment 2 ample eve	ant, s 2, for g	i te-s pe guidan	cific s ce reg	iysten Jardin	s that do is that ar
4. 5.	not apply at th not included o the elimination Select topics f	ie fac in the n of ir from efore t-spe	outi napp as m sele cific	shou ine s ropri any s acting prior	id be hould ate k syste g a so ity, c	dele d be a (/A si ms a acono only t	adde tater Ind e d top hose	and ji id. R nents volut ic fo K/A	ustifi efer s. ions r any s hav	ed; c to E as p sysi	opera 5-401 ossit tem c an im	itiona , Att bie; s por evo porta	illy import achment 2 ample eve blution. ance ratin	ant, s 2, for s ery sys	stem of 2.5	cific s ce reg evolu	aysten Jardin Jain	s that do 1s that ar 9
	not apply at th not included o the elimination Select topics f in the group b Absent a plant	e fac in the n of ir from efore t-spe the l	as m sele cific RO a	shou ine s ropri any s acting prior nd S	id be hould ate k syste g a so ity, c RO ra	dele d be a (/A si ms a econo only t ating	adde tater Ind e d tor hose s for	and ji id. R nents volut ic fo K/A the l	ustifi efer s. ions r any s hav RO a	ed; o to ES as p syst ring a nd Si	opera 5-401 ossit tem c an im RO-o	itiona , Att ole; sa or eve porta nly p	illy import achment 2 ample eve blution. ance ratin ortions, re	ant, s 2, for g ery sys g (IR) espec	stem of of 2.5 tively.	cific s ce reg evolu	aysten Jardin Jain	s that do 1s that ar 9
5.	not apply at th not included o the elimination Select topics f in the group be Absent a plant selected. Use	e fac in the from efore t-spe the pics (G) K	as m sele cific RO a for T /As in	shou ine s ropri any s cting prior nd S iers	id be hould ate k syste g a se fity, c RO ra 1 and rs 1 a	dele d be a (/A st econo only t ating 1 2 fro	adde tater nd e d tor hose s for om ti sha	and ji id. R nents volut ic fo K/A the l he sh	ustifi efer s. ions r any s hav RO a adec selec	ed; c to ES syst ring a nd Si I sys ted t	opera 5-401 ossit tem c an im RO-o tems	itiona , Att ole; s or evo porta nly p and	achment 2 achment 2 ample eve blution. ance ratin ortions, ro K/A categ	g (IR) ories	ite-spe guidan stem of of 2.5 tively.	cific s ce reg • evolu or hig	ysten jardin ition her sh	s that do 15 that ar 9 all be
5. 6.	not apply at th not included o the elimination Select topics f in the group by Absent a plant selected. Use Select SRO to *The generic (e fac n the n of ir from efore t-spe the to pics (G) K (G) K	e outi napp as m e sele cific RO a for T /As in o the ages, e app total:	shou ine s ropri any s ecting prior nd S iers n Tier appi appi , ente blicat s for c on ti	Id be hould ate H syste g a so rity, c RO ra 1 and rs 1 a icabl licabl ble lid each ne SF	dele d be a K/A si ms a econi only t a ting l 2 fro and 2 e evo and 2 e evo a K/A cense cate RO-oi	adde tater nd e d top hose s for s for t shai s hai s leve egory niy e	and ji id. R nents volut ic fo i K/A the I he sh i be s bin or bers el, ar y in t xam,	ustifi efer s. ilons r any s hav RO al adec selec syste , a bi nd the ne tai ente	ed; c to E as p syst ing a nd S i syst ited f em. rief d e poi ble a r it o	ppera 5-401 ossik tem c an im RO-o tems from lescr nt to bove n the	tiona ole; s or eve port: and Sect tals (; if fu	ample even achment 2 ample even olution. ance ratin ortions, ro K/A categ ion 2 of th n of each t #) for eacl rel handlir side of Co	ant, s ary sy: g (IR) espec ories e K/A topic, h syst ig equ	itte-spe guidan stem of of 2.5 (tively. Catalo the top em and	cific s ce reg evolu or higi g, but pics' ir l cates t is sa	ysten jardin ition her sh the to mport: gory. mplec	s that do is that ar g all be ppics ance Enter in other

ES-401, REV 9			IG1 PWR EXAMINATION OUTLINE	FORM ES-401
KA	NAME / SAFETY FUNCTION	IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
		RO SI	O	
008AA2	2.20 Pressurizer Vapor Space Accident / 3	3.4 3.1		The effect of an open PORV on code safety, based on observation of plant parameters
-009EG2	223 Small Break LOCA/3 2,2144 /ml 4/22/4	3.8 3.9		(multi-unit license) Knowledge of the design, procedural and operational differences between units.
011EG2	2.1.7 Large Break LOCA / 3	4.4 4.		Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior and instrument interpretation.
015AK3	.04 RCP Malfunctions / 4	3.1 3.1		Reduction of power to below the steady state power- to- flow limit
7 022AA2	.02 Loss of Rx Coolant Makeup / 2	3.2 3.7		Charging pump problems
)025AK1	.01 Loss of RHR System / 4	3.9 4.3		Loss of RHRS during all modes of operation
026AA1	.07 Loss of Component Cooling Water / a	2.9 3		Flow rates to the components and systems that are serviced by the CCWS; interactions among the components
) 027AK1	.03 Pressurizer Pressure Control System Malfunction / 3	2.6 2.9	• ☑ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Latent heat of vaporization/condensation
038EA2	.08 Steam Gen. Tube Rupture / 3	3.8 4.4		Viable alternatives for placing plant in safe condition when condenser is not available
054AK1	.01 Loss of Main Feedwater / 4	4.1 4.3		MFW line break depressurizes the S/G (similar to a steam line break)
055EK3	.02 Station Blackout / 6	4.3 4.6		Actions contained in EOP for loss of offsite and onsite power

Page 1 of 2







	ES-401, REV 9			T10	G1 PWR EXAMINATION OUTLINE	FORM ES-401-		
	KA	NAME / SAFETY FUNCTION:		IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:			
			RO	SRC)			
(1)	056AG2.4.41	Loss of Off-site Power / 6	2.9	4.6	C Classification	of the emergency action level thresholds and is.		
(3)	057AA1.04	Loss of Vital AC Inst. Bus / 6	3.5	3.6		/CT valves		
(J	065AA1.01	Loss of Instrument Air / 8	2.7	2.5	Remote mar	ual loaders		
B) WE04EK2.1	LOCA Outside Containment / 3	3.5	3.9	including ins	and functions of control and safety systems, trumentation, signals, interlocks, failure automatic and manual features.		
(10)	WE05EK2.2	Inadequate Heat Transfer - Loss of Secondary Heat Sink / 4	3.9	4.2	coolant, eme systems and	at removal systems, including primary ergency coolant, the decay heat removal relations between the proper operation of is to the operation of the facility.		
(\mathbf{x})	WE11EK3.1	Loss of Emergency Coolant Recirc. / 4	3.3	3.9	conditions, ir temperature,	ating characteristics during transient including coolant chemistry and the effects of pressure and reactivity changes and litations and reasons for these operating cs.		
(Y	WE12EK2.2	Steam Line Rupture - Excessive Heat Transfer / 4	3.6	3.9	coolant, eme systems and	It removal systems, including primary orgency coolant, the decay heat removal relations between the proper operation of the to the operation of the facility.		





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ES-401, REV 9			T1Ģ	2 PWR EXAMINATION OUTLINE	FORM ES-401-		
KA	NAME / SAFETY FUNCTION:	I	R	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPI	IC:		
				•			
- 003AK3:03-)USAKB09	Dropped Control Rod / 1 11-1- 4/22/4	3.4	3.7		e automatic runback with reactor in order to e power output		
024AK3.01	Emergency Boration / 1	4.1	4.4	₩ ₩ ₩ ₩hen	emergency boration is required		
028AG2.2.12	Pressurizer Level Malfunction / 2	3.7	4.1		edge of surveillance procedures.		
036AK1.03	Fuel Handling Accident / 8	4	4.3		tions of approaching criticality		
059AA2.03	Accidental Liquid RadWaste Rel. / 9	3.1	3.6		modes, their symptoms and the causes of did ding indications on a radioactive-liquid monitor		
068AK2.02	Control Room Evac. / 8	3.7	3.9		or trip system		
074EK1.01	Inad. Core Cooling / 4	4.3	4.7		ds of calculating subcooling margin		
WE02EK2.1	SI Termination / 3	3.4	3.9	includir	onents and functions of control and safety system ng instrumentation, signals, interlocks, failure s and automatic and manual features.		
WE16EA1.1	High Containment Radiation / 9	3.1	3.2	includin	onents and functions of control and safety system ng instrumentation, signals, interlocks, failure and automatic and manual features.		

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Page 1 of 1

ES-401	, REV 9		T20	1 PWR EXAMINATION OUTLINE	FORM ES-40
KA	NAME / SAFETY FUNCTION:	:	IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
	、	RO	SRC)	
6003A3:0		2.6	2.5		Motor current
003A4.0	5 Reactor Coolant Pump	3.1	3.0		RCP seal leakage detection instrumentation
004K6.3	Chemical and Volume Control	3.1	3.5		Seal injection system and limits on flow range
005A4.0	6 Residual Heat Removal	2.8	2.8		Position of RWST recirculation valve (locked when not i use, continuously monitored when in use).
006A3:00		4.2	4.3		Automatic transfer of ECCS flowpaths
3) 006K6.02	2 Emergency Core Cooling	3.4	3.9		Core flood tanks (accumulators)
)007G2.2	40 Pressurizer Relief/Quench Tank	3.4	4.7		Ability to apply technical specifications for a system.
008K4.07	Component Cooling Water	2.6	2.7		Operation of the CCW swing-bus power supply and its associated breakers and controls
010K2.04	Pressurizer Pressure Control	2.7	2.9		Indicator for code safety position
010K4.02	Pressurizer Pressure Control	3.0	3.4		Prevention of uncovering PZR heaters
012K1.02	Reactor Protection	3.4	3.7		125V dc system

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FORM ES-401-2

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	ES-401, REV 9			T2G	1 PWR EXAMINATION OUTLINE	FORM ES-401-	
	КА	NAME / SAFETY FUNCTION:	I	R	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:	
			RO	SRO			
Ea	012K2.01	Reactor Protection	3.3	3.7		RPS channels, components and interconnections	
Ô	013A2.01	Engineered Safety Features Actuation	4.6	4.8		LOCA	
(1	022K1.04	Containment Cooling	2.9	2.9		Chilled water	
(12	022K3.02	Containment Cooling	3.0	3.3		Containment instrumentation readings	
Ŕ	026A3.01	Containment Spray	4.3	4.5		Pump starts and correct MOV positioning	
(-039A1.05	Main and Reheat Steam	3.2	3.3		RCS T-ave	
	039G2.4.45	Main and Reheat Steam	4.1	4.3		Ability to prioritize and interpret the significance of each annunciator or alarm.	
	059K3.03	Main Feedwater	3.5	3.7.		S/GS	
Ú	061K5.02	Auxiliary/Emergency Feedwater	3.2	3.6		Decay heat sources and magnitude	
(1)	7062K1.02	AC Electrical Distribution	4.1	4.4		ED/G	
A	063A4.02	DC Electrical Distribution	2.8	2.9		Battery voltage indicator	







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ES-401,	REV 9	T20	1 PWR EXAMINATION OUTLINE	FORM ES-401-2
KA	NAME / SAFETY FUNCTION:	IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
		RO SRO)	
60 ^{064G2.2.4}	2 Emergency Diesel Generator	3.9 4.6		Ability to recognize system parameters that are entry- level conditions for Technical Specifications
5 064K6.08	Emergency Diesel Generator	3.2 3.3		Fuel oil storage tanks
52 52	Process Radiation Monitoring	2.5 3.0		Radiation theory, including sources, types, units and effects
076A2.01	Service Water	3.5 3.7		Loss of SWS
(54) 078K2.02	Instrument Air	3.3 3.5		Emergency air compressor
55 TO3A1.01	Containment	3.7 4.1		Containment pressure, temperature and humidity

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FORM ES-401-2

	ES-401, REV 9			T20	G2 PWR EXAMINATION OUTLINE	FORM ES-401-2	
	КА	NAME / SAFETY FUNCTION:		IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:	
			RO	SRC	0		
54	011K6.06	Pressurizer Level Control	2.5	2.8		Correlation of demand signal indication on charging pump flow valve controller to the valve position	
67	016G2.4.3	Non-nuclear Instrumentation	3.7	3.9		Ability to identify post-accident instrumentation.	
(58)	029A2.03	Containment Purge	2.7	3.1		Startup operations and the associated required valve lineups	
EG)	033A1.01	Spent Fuel Pool Cooling	2.7	3.3		Spent fuel pool water level	
$\overline{\mathbb{O}}$	035A4.02	Steam Generator	2.7	2.8		Fill of dry S/G	
(i)	045K4.44	Main Turbine Generator	2.5	2.8		Impulse pressure mode control of steam dumps	
(102)	055K3.01	Condenser Air Removal	2.5	2.7		Main condenser	
306	- 068АЗ:017 У Д. 3.02	Liquid Radwaste m² 4/121/4	2.5	2.4		Evaporator pressure control	
(ul	072K1.04	Area Radiation Monitoring	3.3	3.5		Control room ventilation	
65	075K2.03	Circulating Water	2.6	2.7		Emergency/essential SWS pumps	







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ES-401, REV 9			T3 PWR EXAMINATION OUTLINE													FORM ES-401-2	
KA	NAME / SAFETY FUNCTION:		IR	K1	К2	КЗ	K4	K5	K6	A1	A2	AЗ	A4 G	ì	TOPIC:		
		RO	SRC)													
G2.1.21	Conduct of operations	3.5	3.6											2	Ability verify the controlled proce	dure copy.	
G2.1.42	Conduct of operations	2.5	3.4]	Knowledge of new and spent fue	movement procedures	
G2.2.11	Equipment Control	2.3	3,3]	Knowledge of the process for con design changes.	trolling temporary	
G2.2.4	Equipment Control	3.6	3.6]]	(multi-unit) Ability to explain the v board layouts, systems, instrume actions between units at a facility	ntation and procedural	
)) G2.2.44	Equipment Control	4.2	4.4											2	Ability to interpret control room in status and operation of a system operator actions and directives at conditions	and understand how	
G2.3.11	Radiation Control	3.8	4.3]	Ability to control radiation release	S.	
G2.3.13	Radiation Control	3.4	3.8]	Knowledge of radiological safety licensed operator duties	procedures pertaining t	
G2.4.2	Emergency Procedures/Plans	4.5	4.6							_]	Knowledge of system set points, actions associated with EOP entr		
G2.4.45	Emergency Procedures/Plans	4.1	4.3]	Ability to prioritize and interpret th annunciator or alarm.	e significance of each	
- G2.4.6	Emergency Procedures/Plans	3.7	4.7]]	Knowledge symptom based EOP	mitigation strategies.	



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	ES-401, REV 9				1G1 PWH EXAMINATION OUTLINE	FORM ES-401-2		
	KA	NAME / SAFETY FUNCTION:		IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:		
			RO	SRC)			
10	007EG2.4.41	Reactor Trip - Stabilization - Recovery / 1	2.9	4.6		Knowledge of the emergency action level thresholds and classifications.		
(-1]	009EA2.20	Small Break LOCA / 3	2.6	2.9		Containment vent damper position indicator		
<u>–</u> [18]	022AA2.01	Loss of Rx Coolant Makeup / 2	3.2	3.8		Whether charging line leak exists		
19	057AA2.07	Loss of Vital AC Inst. Bus / 6	3.3	3.5		Valve indicator of charging pump suction valve from RWST		
50	we11EG2.2.4	Loss of Emergency Coolant Recirc. / 4	4.2	4.4		Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions		
$\widehat{\gamma}$	we12EG2.4.5	Steam Line Rupture - Excessive Heat Transfer / 4	4.2	4.0		Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.		

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	ES-401, RE	V 9	S	RO	FIG2 PWR EXAMINATION OUTLINE	FORM ES-401-2	
	КА	NAME / SAFETY FUNCTION:		IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:	
			RO	SRC)		
82	003AG2.4.47	Dropped Control Rod / 1	4.2	4.2		Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	
Ð	028AA2.01	Pressurizer Level Malfunction / 2	3.4	3.6		PZR level indicators and alarms	
(32)	036AA2.02	Fuel Handling Accident / 8	3.4	4.1		Occurrence of a fuel handling incident	
The second	068AG2.4.20	Control Room Evac. / 8	3.8	4.3		Knowledge of operational implications of EOP warnings, cautions and notes.	





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	ES-401, RI	EV 9	S	RO 1	2G1 PWR EXAMINATION OUTLINE	FORM ES-401-2	
	KA	NAME / SAFETY FUNCTION:		IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:	
			RO	SRC)		
6	005A2.04	Residual Heat Removal	2.9	2.9		RHR valve malfunction	
8	008G2.4.35	Component Cooling Water	3.8	4.0		Knowledge of local auxiliary operator tasks during emergency and the resultant operational effects	
6	012G2.1.27	Reactor Protection	3.9	4	· · · · · · · · · · · · · · · · · · ·	Knowledge of system purpose and or function.	
Ŭ	039A2.03	Main and Reheat Steam	3.4	3.7		Indications and alarms for main steam and area radiation monitors (during SGTR)	
ard)	062A2.15	AC Electrical Distribution	2.8	3.2		Consequence of paralleling out-of-phase/mismatch in volts	







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ES-401	, REV 9
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SRO T2G2 PWR EXAMINATION OUTLINE

FORM ES-401-2

KA	NAME / SAFETY FUNCTION:		IR	K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G	TOPIC:
		RO	SRC)	
068G2.1.32	Liquid Radwaste	3.8	4.0		Ability to explain and apply all system limits and precautions.
071A2.06	Waste Gas Disposal	2.4	2.5		Supply failure to the isolation valve
079A2.01	Station Air	2.9	3.2		Cross-connection with IAS



ES-401, REV 9

NAME / SAFETY FUNCTION:

KA



IR

RO SRO

SRO T3 PWR EXAMINATION OUTLINE FORM ES-401-2 K1 K2 K3 K4 K5 K6 A1 A2 A3 A4 G TOPIC:

(14) G2.1.45	Conduct of operations	4.3 4.3	Ability to identify and interpret diverse indications to validate the response of another indication
G2.2.39 G2.2.39	Equipment Control	3.9 4.5	Knowledge of less than one hour technical specification action statements for systems.
G2.2.5	Equipment Control	2.2 3.2	Knowledge of the process for making design or operating changes to the facility
G2.3.15	Radiation Control	2.9 3.1	Knowledge of radiation monitoring systems
(23.5) (2.3.5)	Radiation Control	2.9 2.9	Ability to use radiation monitoring systems
G2.4.14	Emergency Procedures/Plans	3.8 4.5	Knowledge of general guidelines for EOP usage.
(00) ^{G2.4.27}	Emergency Procedures/Plans	3.4 3.9	Knowledge of "fire in the plant" procedures.

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