

Facility: <i>Vermont Yankee</i> Date of Exam: <i>9/15/00</i> Exam Level: <i>SRO</i>													
Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	5	6	6				3	3			3	26
	2	4	3	6				2	2			-	17
	Tier Totals	9	9	12				5	5			3	43
2. Plant Systems	1	2	1	3	3	2	2	3	3	2	2	-	23
	2	-	2	2	2	1	1	1	1	3	-	-	13
	3	1	-		1	-	-	-	1	-	1	-	4
	Tier Totals	3	3	5	6	3	3	4	5	5	3	-	40
3. Generic Knowledge and Abilities					Cat 1	Cat 2	Cat 3	Cat 4					
					5	5	3	4					17
<p>Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).</p> <p>2. Actual point totals must match those specified in the table.</p> <p>3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.</p> <p>4. Systems/evolutions within each group are identified on the associated outline.</p> <p>5. The shaded areas are not applicable to the category/tier.</p> <p>6.* The generic K/As in Tiers 1 and 2 shall be selected from Section 2 of the K/A Catalog, but the topics must be relevant to the applicable evolution or system.</p> <p>7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.</p>													

ES-401		BWR SRO Examination Outline Emergency and Abnormal Plant Evolutions - Tier 1/Group 1						Form ES-401-1		
E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points	
295003 Partial or Complete Loss of AC Pwr / 6	X						AK106 SBO	4.0	1	B
295006 SCRAM / 1			X				EK301 Rx Lvl Response	3.9	1	B
295007 High Reactor Pressure / 3		X					AK201 Rx/Turb Press Reg Sys	3.7	1	N
295009 Low Reactor Water Level / 2			X				AK301 Recirc Run back	3.3	1	N
295010 High Drywell Pressure / 5					X		AA203 DRYWELL RAD LVLs	3.6	1	B
295013 High Suppression Pool Temp. / 5			X				AK302 RPU-ED	3.8	1	B
295014 Inadvertent Reactivity Addition / 1										
295015 Incomplete SCRAM / 1	X						AK104 Rx Pressure	3.8	1	N
295016 Control Room Abandonment / 7					X		AA202 RWTR LVL	4.3	1	B
295017 High Off-site Release Rate / 9										
295023 Refueling Accidents Cooling Mode / 8				X			AA104 RAD Monitoring Ea	3.7	1	N
295024 High Drywell Pressure / 5			X				EK307 Drywell Venting	4.0	1	B
295025 High Reactor Pressure / 3	X						EK105 Exceeding Safety Limit	4.7	1	N
295026 Suppression Pool High Water Temp. / 5						X	G 2.4.6 Symptom Based EOP Strategy	4.0	1	B
295027 High Containment Temperature / 5										
295030 Low Suppression Pool Water Level / 5					X		EA203 Rx Pressure	3.9	1	N
295031 Reactor Low Water Level / 2	X						EK101 Adequate Core Cooling	4.7	1	B
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1				X			AA107 Neutron Monitoring	4.1	1	N
295038 High Off-site Release Rate / 9	X						EK102 High Offsite Release	4.4	1	N
500000 High Containment Hydrogen Conc. / 5			X				EK303 OPERATION of H ₂ /O ₂ Recomb.	3.5	1	B
295015 Incomplete SCRAM				X			AA101 OPERATE CRD HYD.	3.9	1	B
295015 Incomplete SCRAM						X	G 2.1.25 A to interpret Ref mat'l	3.1	1	N
295010 High D/W Press						X	G 2.1.9 Direct personal actions	4.0	1	B
K/A Category Totals:	5	4	6	3	3	3	Group Point Total:	26		

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BWR SRO Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points	
295003 Partial or Complete Loss of AC Pwr / 6		X					AK202 EDG	4.2	1	B
295006 SCRAM / 1										
295007 High Reactor Pressure / 3										
295009 Low Reactor Water Level / 2		X					AK203 Recirc Sys	3.2	1	N
295010 High Drywell Pressure / 5										
295013 High Suppression Pool Temp. / 5										
295014 Inadvertent Reactivity Addition / 1										
295015 Incomplete SCRAM / 1										
295016 Control Room Abandonment / 7										
295017 High Off-site Release Rate / 9										
295023 Refueling Accidents Cooling Mode / 8		X					AK202 SW SYSTEM	3.2	1	B
295024 High Drywell Pressure / 5		X					EK204 RHR/LPCI	3.9	1	m
295025 High Reactor Pressure / 3										
295026 Suppression Pool High Water Temp. / 5										
295027 High Containment Temperature / 5										
295030 Low Suppression Pool Water Level / 5										
295031 Reactor Low Water Level / 2		X					EK205 LPCI	4.3	1	m
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1										
295038 High Off-site Release Rate / 9										
500000 High Containment Hydrogen Conc. / 5										
295023 Refuel Accid.			X				AK302 INTERLOCK ASSOCI. w/ Eg.	3.8	1	N
K/A Category Totals:							Group Point Total:			26

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BWR SRO Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points	
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4		X					AK207 CORE Flow Indication	3.4	1	m
295002 Loss of Main Condenser Vacuum / 3		X					AK202 MAIN Turbine	3.2	1	B
295004 Partial or Total Loss of DC Pwr / 6			X				AK303 Rx SCRAM	3.5	1	m
295005 Main Turbine Generator Trip / 3	X						AK101 PRESSURE EFFECT ON Power	4.1	1	N
295008 High Reactor Water Level / 2				X			AA101 Rx WTR LVL Control	3.7	1	B
295011 High Containment Temperature / 5										
295012 High Drywell Temperature / 5										
295018 Partial or Total Loss of CCW / 8	X						AK 101 EFFECTS on Components	3.6	1	m
295019 Partial or Total Loss of Inst. Air / 8		X					AK201 Air Header PRESSURE	3.9	1	B
295020 Inadvertent Cont. Isolation / 5 & 7					X		AA203 Rx PWR	3.7	1	B
295021 Loss of Shutdown Cooling / 4			X				AK302 FEED & BLEED	3.4	1	m
295022 Loss of CRD Pumps / 1	X						AK101 Rx PRESSURE vs Insert Cap.	3.4	1	m
295028 High Drywell Temperature / 5			X				EK302 RPV FLOODING	3.8	1	m
295029 High Suppression Pool Water Level / 5				X			EA101 Gnt/DW VAC BKR	3.7	1	B
295032 High Secondary Containment Area Temperature / 5			X				EK301 Em/Norm Depressurization	3.8	1	B
295033 High Secondary Containment Area Radiation Levels / 9			X				EK301 SEC Gnt Limits/RPV-ED	3.5	1	m
295034 Secondary Containment Ventilation High Radiation / 9			X				EK302 SBT/Hi Rad Sec Gnt	4.1	1	B
295035 Secondary Containment High Differential Pressure / 5										
295036 Secondary Containment High Sump/Area Water Level / 5					X		EA202 WATER LVL in EFFECTED AREA	3.1	1	B
600000 Plant Fire On Site / 8										
K/A Category Point Totals:	4	3	6	2	2	-	Group Point Total:		17	

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BWR SRO Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

Form ES-401-1

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4									
295002 Loss of Main Condenser Vacuum / 3									
295004 Partial or Total Loss of DC Pwr / 6									
295005 Main Turbine Generator Trip / 3									
295008 High Reactor Water Level / 2									
295011 High Containment Temperature / 5									
295012 High Drywell Temperature / 5									
295018 Partial or Total Loss of CCW / 8									
295019 Partial or Total Loss of Inst. Air / 8									
295020 Inadvertent Cont. Isolation / 5 & 7									
295021 Loss of Shutdown Cooling / 4									
295022 Loss of CRD Pumps / 1									
295028 High Drywell Temperature / 5	X						FK101 Rx WTR LVL Measurement	3.7	1
295029 High Suppression Pool Water Level / 5									
295032 High Secondary Containment Area Temperature / 5									
295033 High Secondary Containment Area Radiation Levels / 9									
295034 Secondary Containment Ventilation High Radiation / 9									
295035 Secondary Containment High Differential Pressure / 5									
295036 Secondary Containment High Sump/Area Water Level / 5									
600000 Plant Fire On Site / 8									
K/A Category Point Totals:							Group Point Total:		17

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BWR SRO Examination Outline
Plant Systems - Tier 2/Group 1

Form ES-401-1

Plant Systems - Tier 2/Group 1															Form ES-401-1	
System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points		
201005 RCIS																
202002 Recirculation Flow Control	X											K104 Rx/Turb Press Reg	3.1	1		m
203000 RHR/LPCI: Injection Mode																
206000 HPCI										X		A407 Torus Level	3.7	1		m
207000 Isolation (Emergency) Condenser																
209001 LPCS							X					A107 EDG LOADING	3.1	1		m
209002 HPCS																
211000 SLC						X						K603 Power Supplies	3.3	1		m
212000 RPS	X											K106 CRDH SYS	3.6	1		m
215004 Source Range Monitor					X							K503 Charging Detector Pss	2.8	1		m
215005 APRM / LPRM					✓							K505 Core Flow Effector APRM	3.6	1		m
216000 Nuclear Boiler Instrumentation			X									K303 RCIC	3.8	1		m
217000 RCIC								X				A215 STEAM LINE BREAK	3.8	1		N
218000 ADS		X										K201 ADS LOGIC	3.3	1		B
223001 Primary CTMT and Auxiliaries				X								K406 Maintains proper P _h /sec Cut _{off}	3.3	1		B
223002 PCIS/Nuclear Steam Supply Shutoff									X			A301 System Ind Lights	3.4	1		B
226001 RHR/LPCI: CTMT Spray Mode							X					A403 SPRAY VALVES	3.4	1		m
239002 SRVs						X						K602 Lights & Alarms	3.5	1		B
241000 Reactor/Turbine Pressure Regulator			X									K302 S _{FD} of Turb/GEN	4.3	1		B
259002 Reactor Water Level Control							X					A1.01 FW Flow	3.3	1		B
261000 SGTS						X						K6.01 Loss of AC effectors _{sys}	3.1	1		B
262001 AC Electrical Distribution			X									K301 MAJOR SYS LOADS	3.7	1		B
264000 EDGs				X								K401 Normal TRIPS	3.7	1		N
290001 Secondary CTMT																
K/A Category Point Totals:	2	1	3	3	2	3	3	3	1	2	-	Group Point Total:			23	

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201005 RCIS														
202002 Recirculation Flow Control														
203000 RHR/LPCI: Injection Mode														
206000 HPCI				X								K408 Manual SYS Init.	4.3	1
207000 Isolation (Emergency) Condenser														
209001 LPCS								X				A202 VALVE CLOSURE	3.2	1
209002 HPCS														
211000 SLC														
212000 RPS										X		A407 STATUS of SYSTEMS	3.9	1
215004 Source Range Monitor														
215005 APRM / LPRM	X											K102 Irm		1
216000 Nuclear Boiler Instrumentation														
217000 RCIC														
218000 ADS														
223001 Primary CTMT and Auxiliaries														
223002 PCIS/Nuclear Steam Supply Shutoff														
226001 RHR/LPCI: CTMT Spray Mode														
239002 SRVs														
241000 Reactor/Turbine Pressure Regulator														
259002 Reactor Water Level Control														
261000 SGTS						X						K6.01 Loss of AG To Sys	3.0	1
262001 AC Electrical Distribution														
264000 EDGs														
290001 Secondary CTMT														
K/A Category Point Totals:												Group Point Total:		23

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BWR SRO Examination Outline
Plant Systems - Tier 2/Group 2

Form ES-401-1

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points	
201001 CRD Hydraulic		X										K202 SCRAM VALVE Sol	3.7	1	m
201002 RMCS				X								K404 Single Notch w/D	3.3	1	m
201004 RSCS			X									K301 RMCS	3.4	1	B
201006 RWM															
202001 Recirculation								X				A210 Recirc Pp Seal Fail	3.9	1	N
204000 RWCUC															
205000 Shutdown Cooling							X					A105 Rx WTR LVL	3.4	1	m
214000 RPIS															
215002 RBM															
215003 IRM			X									K301 Loss/MAL on RPS	4.0	1	B
219000 RHR/LPCI: Torus/Pool Cooling Mode															
230000 RHR/LPCI: Torus/Pool Spray Mode															
234000 Fuel Handling Equipment															
239003 MSIV Leakage Control															
245000 Main Turbine Gen. and Auxiliaries					X							K506 Turb Shaft SEAL	2.6	1	B
259001 Reactor Feedwater															
262002 UPS (AC/DC)									X			A301 Xfer Preferred to A14	3.1	1	B
263000 DC Electrical Distribution		X										K201 Major DC LOADS	3.4	1	B
271000 Offgas															
272000 Radiation Monitoring												K603 AC Power	3.0	1	m
286000 Fire Protection									X			A301 Fire WTR Pp START	3.4	1	m
290003 Control Room HVAC															
300000 Instrument Air				X								K401 MAN/Auto Xfer of Control	2.9	1	N
400000 Component Cooling Water															B
K/A Category Point Totals:		2	2	2	1	1	1	1	3			Group Point Total:		13	

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System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201003 Control Rod and Drive Mechanism				X								K401 WATER to SCRAM	3.7	1
215001 Traversing In-core Probe								X				A207 fail to Retract	3.7	1
233000 Fuel Pool Cooling and Cleanup														
239001 Main and Reheat Steam	X											K127 RPS	4.1	1
256000 Reactor Condensate										X		A406 SYS PRESSURE	3.0	1
268000 Radwaste														
288000 Plant Ventilation														
290002 Reactor Vessel Internals														
K/A Category Point Totals:	1			1				1		1		Group Point Total:		4
Plant-Specific Priorities														
System / Topic	Recommended Replacement for...						Reason						Points	
Plant-Specific Priority Total (limit 10):														

Facility: <i>Vermont</i> Date of Exam: <i>9/15/00</i> Exam Level: <i>RO</i>													
Tier	Group	K/A Category Points											Point Total
		K 1	K 2	K 3	K 4	K 5	K 6	A 1	A 2	A 3	A 4	G *	
1. Emergency & Abnormal Plant Evolutions	1	4	2	3				2	2			-	13
	2	4	5	4				1	4			1	19
	3			2				1	1			-	4
	Tier Totals	8	7	9				4	7			1	36
2. Plant Systems	1	3	2	3	5	2	3	2	3	2	3	-	28
	2	2	1	2	2	1	2	2	1	3	3	-	19
	3					1			1	1	1	-	4
	Tier Totals	5	3	5	7	4	5	4	5	6	7	-	51
3. Generic Knowledge and Abilities						Cat 1	Cat 2	Cat 3	Cat 4				
						4	3	2	4	13			

Note: 1. Ensure that at least two topics from every K/A category are sampled within each tier (i.e., the "Tier Totals" in each K/A category shall not be less than two).

2. Actual point totals must match those specified in the table.

3. Select topics from many systems; avoid selecting more than two or three K/A topics from a given system unless they relate to plant-specific priorities.

4. Systems/evolutions within each group are identified on the associated outline.

5. The shaded areas are not applicable to the category/tier.

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

7. On the following pages, enter the K/A numbers, a brief description of each topic, the topics' importance ratings for the RO license level, and the point totals for each system and category. K/As below 2.5 should be justified on the basis of plant-specific priorities. Enter the tier totals for each category in the table above.

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BWR RO Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1/Group 1

Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points	
295005 Main Turbine Generator Trip / 3	X						AK101 PRESSURE EFFECT ON POWER	4.0	1	N
295006 SCRAM / 1			X				EK301 Rx WTR LEVEL Response	3.8	1	B
295007 High Reactor Pressure / 3		X					AK201 Rx/turb Press. Reg Sys	3.5	1	N
295009 Low Reactor Water Level / 2			X				AK301 RECIRC RUNBACK	3.2	1	N
295010 High Drywell Pressure / 5					X		AA203 DRYWELL RADIATION LEVELS	3.3	1	B
295014 Inadvertent Reactivity Addition / 1		X					AK20's MODERATOR TEMP	3.4	1	N
295015 Incomplete SCRAM / 1					X		AA202 CONTROL ROD POSITION	4.1	1	N
295024 High Drywell Pressure / 5			X				EK307 DRYWELL VENTING	3.5	1	B
295025 High Reactor Pressure / 3	X						EK105 EXCEEDING A SAFETY LIMIT	4.4	1	M
295031 Reactor Low Water Level / 2	X						EK101 ADEQUATE CORE COOLING	4.6	1	B
295037 SCRAM Condition Present and Power Above APRM Downscale or Unknown / 1				X			AA107 NEUTRON MONITORING	4.1	1	M
500000 High Containment Hydrogen Conc. / 5										
295015 Incomplete SCRAM	X						AK104 Rx PRESSURE	3.8	1	N
295015 Incomplete SCRAM			X				AA101 CRD HYDRAULICS	3.8	1	B
K/A Category Totals:	4	2	3	2	2	-	Group Point Total:			

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BWR RO Examination Outline
Emergency and Abnormal Plant Evolutions - Tier 1/Group 2

Form ES-401-2

E/APE # / Name / Safety Function	K1	K2	K3	A1	A2	G	K/A Topic(s)	Imp.	Points	
295001 Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4		X					AK207 CORE FLOW INDICATION	3.4	1	m
295002 Loss of Main Condenser Vacuum / 3		X					AK202 MAIN TURBINE	3.1	1	B
295003 Partial or Complete Loss of AC Pwr / 6	X						AK106 SBO	3.8	1	B
295004 Partial or Complete Loss of DC Pwr / 6			X				AK303 REACTOR SCRAM	3.1	1	m
295008 High Reactor Water Level / 2				X			AA101 RX WTR LVL CONTROL	3.7	1	B
295011 High CTMT Temperature / 5										NA
295012 High Drywell Temperature / 5					X		AA202 DRYWELL PRESSURE	3.9	1	B
295013 High Suppression Pool Temp. / 5			X				AK302 High torus temp and RPV-ED	3.6	1	M
295016 Control Room Abandonment / 7					X		AA202 RCIC ops fm ASP	4.2	1	B
295017 High Off-site Release Rate / 9										
295018 Partial or Complete Loss of CCW / 8	X						AK101 EFFECTS ON Component Sys Ops	3.5	1	m
295019 Part. or Comp. Loss of Inst. Air / 8		X					AK201 Scram air header < 55#	3.8	1	M
295020 Inadvertent Cont. Isolation / 5 & 7					X		AA203 Reactor Power	3.7	1	B
295022 Loss of CRD Pumps / 1	X						AK101 LOSS OF CRD; Rx Press > ECC#	3.4	1	M
295026 High Suppression Pool Water Temp. / 5						X	G-246 Basis of EOP-1	3.1	1	B
295027 High Containment Temperature / 5										NA
295028 High Drywell Temperature / 5			X				EK301 EMERGENCY DEPRESSURIZATION	3.6	1	B
295029 High Suppression Pool Water Level / 5	X						EK101 Containment Integrity	3.4	1	m
295030 Low Suppression Pool Water Level / 5		X					AK201 HPCI/Low torus level	3.8	1	B
295033 High Sec. Cont. Area Rad. Levels / 9					X		AK203 Cause of High AREA RAD	3.7	1	B
295034 Sec. Cont. Ventilation High Rad. / 9			X				EK302 SBGTS/High Rad. Sec. Cont.	4.1	1	B
295038 High Off-site Release Rate / 9		X					EK202 OFFGAS SYSTEM	3.6	1	m
600000 Plant Fire On Site / 8										
K/A Category Point Totals:	4	5	4	1	4	1	Group Point Total:		19	

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BWR RO Examination Outline
Plant Systems - Tier 2/Group 1

Form ES-401-2

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points	
201001 CRD Hydraulic		X										K202 SCRAM VALVE Solenoids	3.6	1	m
201002 RMCS				X								K404 Single Notch w/d	3.3	1	m
201005 RCIS															
202002 Recirculation Flow Control	X											K104 Rx/turb Press Reg	3.1	1	m
203000 RHR/LPCI: Injection Mode								X				A213 VALVE OPENINGS	3.2	1	m
206000 HPCI										X		A407 TORUS LEVEL	3.8	1	m
207000 Isolation (Emerg.) Condenser															
209001 LPCS								X				A202 VALVE Closures	3.2	1	m
209002 HPCS															
211000 SLC						X						K603 Power Supplies	3.2	1	m
212000 RPS	X											K106 CRDH SYS	3.5	1	m
215003 IRM			X									K301 RPS	3.9	1	m
215004 SRM					X							K503 Changing Detect Pos	2.8	1	m
215005 APRM / LPRM					X							K505 Core Flow Effects	3.6	1	m
216000 Nuclear Boiler Instrumentation			X									K303 RCIC	3.5	1	m
217000 RCIC								X				A215 STEAM LINE BREAK	3.8	1	n
218000 ADS		X										K201 ADS LOGIC	3.1	1	B
223001 Primary CTMT and Auxiliaries				X								K406 Maintain Pri/Sec D/p	3.1	1	B
223002 PCIS/Nuclear Steam Supply Shutoff									X			A301 SYS IND LIGHTS	3.4	1	B
239002 SRVs										X		A407 LIGHTS & ALARMS	3.6	1	m
241000 Reactor/Turbine Pressure Regulator			X									K302 S/D of the TURB/GEN	4.2	1	B
259001 Reactor Feedwater						X						K602 CONDENSATE	3.3	1	R
259002 Reactor Water Level Control							X					A101 FW FLOW	3.3	1	B
261000 SGTS									X			A302 FAN STARTS	3.2	1	B
264000 EDGs				X								K401 Normal Trips	3.5	1	n
K/A Category Point Totals:															
Group Point Total:														28	

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BWR RO Examination Outline
Plant Systems - Tier 2/Group 1

Form ES-401-2

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points
201001 CRD Hydraulic														
201002 RMCS														
201005 RCIS														
202002 Recirculation Flow Control														
203000 RHR/LPCI: Injection Mode				X								K410 DEDICATED INJ	3.9	1
206000 HPCI				X								K408 MAN. SYS. INITIATION	4.2	1
207000 Isolation (Emerg.) Condenser														
209001 LPCS							X					A107 EDG LOADING	3.0	1
209002 HPCS														
211000 SLC														
212000 RPS										X		A407 SYSTEM STATUS ^{LIGHTS} & ACUM	4.0	1
215003 IRM														
215004 SRM														
215005 APRM / LPRM	X											K116 FLOW COMPARITOR	3.3	1
216000 Nuclear Boiler Instrumentation														
217000 RCIC														
218000 ADS														
223001 Primary CTMT and Auxiliaries														
223002 PCIS/Nuclear Steam Supply Shutoff														
239002 SRVs						X						K602 AIR (N ₂) Supply	3.4	1
241000 Reactor/Turbine Pressure Regulator														
259001 Reactor Feedwater														
259002 Reactor Water Level Control														
261000 SGTS														
264000 EDGs														
K/A Category Point Totals:	3	2	3	5	2	3	2	3	2	3				
Group Point Total:														28

ES-401

BWR RO Examination Outline
Plant Systems - Tier 2/Group 2

Form ES-401-2

System # / Name	K1	K2	K3	K4	K5	K6	A1	A2	A3	A4	G	K/A Topic(s)	Imp.	Points	
201003 Control Rod and Drive Mechanism				X								K404 WATER to SCRAM	3.6	1	N
201004 RSCS			X									K301 RMCS	3.3	1	B
201006 RWM															
202001 Recirculation								X				A210 RECIRC P SEAL Failure	3.5	1	N
204000 RWCU										X		A406 Pot. RESIN ENTRY to RPV	3.0	1	M
205000 Shutdown Cooling							X					A105 Rx WATER LVL	3.4	1	M
214000 RPIS															
215002 RBM						X						K605 LPRM DET	2.8	1	B
219000 RHR/LPCI: Torus/Pool Cooling Mode										X		A406 VALVE Logic/Auto LPCI	3.9	1	B
226001 RHR/LPCI: CTMT Spray Mode										X		A403 SPRAY VALVES	3.5	1	M
230000 RHR/LPCI: Torus/Pool Spray Mode															
239001 Main and Reheat Steam	X											K127 RPS	4.0	1	M
245000 Main Turbine Gen. and Auxiliaries				X								K506 TURBINE shaft Seal	2.5	1	B
256000 Reactor Condensate						X						A103 SYSTEM PRESSURE	2.8	1	B
262001 AC Electrical Distribution			X									K301 MAJOR System LOADS	3.5	1	M
262002 UPS (AC/DC)									X			A301 X-Fer Fm preferred salt	2.8	1	B
263000 DC Electrical Distribution		X										K201 MAJOR DC LOADS	3.1	1	B
271000 Offgas									X			A301 Auto SYSTEM ISOL.	3.3	1	B
272000 Radiation Monitoring					X							K603 AC POWER	2.8	1	M
286000 Fire Protection									X			A301 FIRE WATER Pp START	3.4	1	M
290001 Secondary CTMT															
290003 Control Room HVAC															
300000 Instrument Air				X								K401 MAN/Auto TRANSFER Control	2.8	1	B
400000 Component Cooling Water	X											K102 LOADS cooled by CCW	3.2	1	M
K/A Category Point Totals:	2	1	2	2	1	2	2	1	3	3					
Group Point Total:														19	

Facility: <u>VY</u>		Date of Exam: <u>9-18-2000</u>		Exam Level:	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1.1	K of Conduct of Ops Req.	3.7	1	N
	2.1.29	K of How to conduct & Verify VLV L/u	3.4	1	N
	2.1.29	K of How to conduct & Verify VLV L/u	3.4	1	N
	2.1.2	K of OPERATOR Response during Mode Change	3.0	1	M
	2.1.				
	2.1.				
	Total				4
Equipment Control	2.2.13	K of Clearance & Tagging	3.6	1	M
	2.2.22	K of LCO & Safety Limits	3.4	1	N
	2.2.30	K of RO DUTIES DURING Refuel	3.5	1	M
	2.2.				
	2.2.				
	2.2.				
	Total				3
Radiation Control	2.3.1	K of 10CFR20 & facility RAD Cont.	2.6	1	M
	2.3.4	K of RAD Exposure Limits	2.5	1	M
	2.3.				
	2.3.				
	2.3.				
	2.3.				
	Total				2
Emergency Procedures/ Plan	2.4.4	A to recognize Abnormal ind for EOP entry	4.0	1	N
	2.4.29	K of E-PLAN	2.6	1	N
	2.4.38	A to Support Emerg. Direct	2.2	1	N
	2.4.11	K of ABNORMAL PROCEDURES	3.4	1	M
	2.4.				
	2.4.				
	Total				4
Tier 3 Point Total (RO/SRO)				13/17	

Facility: VY		Date of Exam: 9-18-2000		Exam Level:	
Category	K/A #	Topic	Imp.	Points	
Conduct of Operations	2.1.				
	2.1. 2	K of operator responsibilities during ^{ALL} modes	4.0	1	m
	2.1. 1	K of Conduct of Operation Reg	3.8	1	B
	2.1. 9	A to direct personnel Activities in CR	4.0	1	N
	2.1. 12	A to Apply Tech Spec	4.0	1	B
	2.1. 25	K of T.S. BASES	3.7	1	N
	Total			5	
Equipment Control	2.2.				
	2.2. 30	K of new & spent Fuel move proced.	3.5	1	N
	2.2. 11	K of process for Temp. changes	3.4	1	N
	2.2. 28	K of New/Spent Fuel move proced	3.8	1	B
	2.2. 24	A to Analyze Mnt Act on LCD Status	3.8	1	B
	2.2. 26	K of Refueling Admin Require	3.7	1	N
	Total			5	
Radiation Control	2.3. 1	K of 10CFR20 & Fac. RAD Control Regs	3.0	1	m
	2.3. 4	K of RAD EXPOSURE Limits	3.1	1	m
	2.3. 2	K of ALARA	2.9	1	N
	2.3.				
	2.3.				
	2.3.				
	Total			3	
Emergency Procedures/ Plan	2.4. 29	K of E-PLAN	4.0	1	B
	2.4. 29	K of E-PLAN	4.0	1	N
	2.4. 30	K of event to be report to outsd Agen	3.6	1	B
	2.4. 40	SRO Responsibilities in E-PLAN	4.0	1	B
	2.4.				
	2.4.				
	Total			4	
Tier 3 Point Total (RO/SRO)				13/17	

Facility: <u>VERMONT YANKEE</u>		Date of Examination: <u>9/18/00</u>
Examination Level (circle one): RO / <u>SRO</u>		Operating Test Number: <u>1</u>
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	CONDUCT OF OPERATIONS	JPM: Verify RCS temperature within TS limits prior to starting RR pump
		JPM: Response to report of a fire
A.2	EQUIPMENT CONTROL	JPM: Review completed surveillance and take action for out of spec data
A.3	RADIATION CONTROL	Q: Given an emergency condition, determine allowable stay times
		Q: Apply exposure limits for a declared pregnant worker with existing exposure
A.4	EMERGENCY PLAN	JPM: Classify an event based on simulated plant conditions

Facility: _____ VERMONT YANKEE _____		Date of Examination: _____ 9/18/00 _____
Examination Level (circle one): <u>RO</u> / SRO		Operating Test Number: _____ 1 _____
Administrative Topic/Subject Description		Describe method of evaluation: 1. ONE Administrative JPM, OR 2. TWO Administrative Questions
A.1	CONDUCT OF OPERATIONS	JPM: Verify RCS temperature within TS limits prior to starting RR pump
		JPM: Response to report of a medical emergency
A.2	EQUIPMENT CONTROL	JPM: Disable a control room alarm annunciator
A.3	RADIATION CONTROL	Q: Given an emergency condition, determine allowable stay times
		Q: Limitations on personnel entering a LHRA without HP support
A.4	EMERGENCY PLAN	JPM: Perform control room emergency communications checks

Facility: VERMONT YANKEE Date of Examination: 9/18/2000
Exam Level (circle one): RO / SRO(I) / SRO(U) Operating Test No.: 1

B.1 Control Room Systems

System / JPM Title	Type Code*	Safety Function
a. CRD/Drive rods to exit instability region; power oscillations	(M)(A)(S)	1
b. FW/Transfer feed pumps at power	(D)(S)	2
c. MS/Open MSIVs after Gp. I isolation w/ subsequent indications of MSL high radiation	(N)(A)(S) (L)	3
d. RR/Start idle recirc pump w/other pump running; disc separation	(D)(A)(S)	4
e. PCIS/Reset Gp. II isolation	(D)(S)	5
f. AC/Transfer station load fm startup to aux transformer	(D)(S)	6
g. SBGT/Manually initiate SBGT"A"	(D)(S)	9

B.2 Facility Walk-Through

a. SLC/Local firing of squib valve	(D)(R)	1
b. RPS/Start RPS MG set locally; output voltage fails to reach 120V	(D)(A)(R)	7
c. SDC/Place SDC isolation valve on alternate power	(M)(P)	4

* Type Codes: (D)irect from bank, (M)odified from bank, (N)ew, (A)lternate path, (C)ontrol room, (S)imulator, (L)ow-Power, (R)CA